A Study of *Domaines* and *Riul*: Two Serial Pieces Written in 1968 by *Pierre Boulez* and *Isang Yun*

by

Jinkyu Kim

Submitted to the faculty of the
Jacobs School of Music in partial fulfillment
of the requirements for the degree,
Doctor of Music
Indiana University
May 2018

Accepted by the faculty of the
Indiana University Jacobs School of Music,
in partial fulfillment of the requirements for the degree
Doctor of Music

Doctoral Committee

_____
Julian L. Hook, Research Director

_____
James Campbell, Chair

_____
Eli Eban

_____
Kathryn Lukas

April 10, 2018

To Youn

Table of Contents

List of Examples

List of Figures

List of Tables

Chapter 1: MUSICAL LANGUAGES AFTER WORLD WAR II

Even though World War II was destructively finished by the first use of atomic bombs in history, people believed that radical improvements in science and technology and the reformation of the social structure would ultimately make a better world than before the war.

The German composer Karlheinz Stockhausen (1928–2007) wrote in his early twenties "that I was part of a new epoch; and that epoch which had started a hundred years ago, even 2,500 years ago with the way of thinking of the ancient Greeks, had finished during the last war." The French composer and conductor Pierre Boulez (1925–2016) also described the opportunity he felt: "In 1945–1946 nothing was ready and everything remained to be done: it was our privilege to make the discoveries and also to find ourselves faced with nothing—which may have its difficulties but also has many advantages."[1]

Although older composers such as Dmitri Shostakovich and Benjamin Britten produced music reflecting the changes of the post-war period, it was undeniable that the younger generation of composers were at the front of the new era. Boulez and his contemporary composers strongly believed that composers should embark on making new ways to create music. They strived to create new paths of the composition that reflected concurrent trends of the time, society, and literature by emphasizing scientific experimentation, embracing new technologies, and reacting against precepts to create entirely new orders in their music.

The twelve-tone method remained the most important compositional resource among the young generation of composers of the post-war period. However, Schoenberg's idea of integrating new technique with old forms and genres was completely abandoned by the young

[1] Joseph Auner, *Music in the Twentieth and Twenty-First Centuries* (New York: W. W. Norton, 2013), 170.

composers, because they considered the idea of interweaving old and new was inappropriate to represent the new era they lived in.

There were two opposite trends in twelve-tone composition after the war.[2] One way embraced less-controlled approaches toward the application of the principles, and especially the ordering, of twelve-tone music to alleviate its strictness. In this type of music, the work departs from strict twelve-tone compositional practices in two ways: 1) reordering pitches within segments to highlight certain pitch-class intervals or other pitch-related elements, and 2) regarding the set freely as a derivation point from which to obtain compositional motives.[3] On the other hand, Integral Serialism, also known as Total Serialism, extends organized serial elements to other aspects of the music such as dynamics, duration, register, and articulation as well as pitch.

Besides the use of twelve-tone technique, the urge for structural reformation in music was prominent after the war. Mary Wennerstrom briefly defines the nature of the resulting open forms:

> Much of the music composed since 1950 reveals a radical approach to structure. Western music traditionally has a beginning, a middle, and an end; a composition progresses in one direction toward certain climactic points and creates a meaningful shape in time, a shape carefully constructed by the composer. In contrast to these standard procedures, composers in the second half of the century have developed new formal techniques, which are ongoing process[es] rather than closed designs. These works depend not only on the composer but also on the performers and occasionally on the audience for their shape and structure.[4]

Electronic music, which emerged after the war, proved to be an attractive genre for young composers who wanted to make music that was entirely new. Stockhausen and other composers tried to embrace electronic sounds to forge a new way to break not only from the established harmonic and melodic structure of the past music, but also from the traditional sounds themselves.[5] The technological and aesthetic development of electronic music led composers to

---

[2] DeLone et al., "Sets and Ordering Procedures in Twentieth-Century Music," in *Aspects of Twentieth-Century Music*, ed. Wittlich (Englewood Cliffs, NJ: Prentice–Hall, 1975), 440.

[3] DeLone et al., "Sets and Ordering Procedures," 430.

[4] DeLone et al., "Form in Twentieth-Century Music," 59.

[5] Auner, *Music,* 213.

reconstruct the basic elements of sound, composition, and performance. The new technologies in music were soon adopted in almost all music genres such as rock and jazz as well as in film soundtracks, and they became part of people's daily life.

The development of musical language after the 1960s can be defined as a perpetual multiplicity and a diversification. Although the musical trends developed after the war were still considered important, a growing number of composers wanted to secure the position of their music by changing the musical path back. Composers adapted selective materials of the past through quotation, collage, and allusions to make their music more relevant in the historical context.[6]

Composers moved beyond Integral Serialism and Indeterminacy by developing sound masses and new timbres, and by juxtaposing independent lines to create works with expressive surfaces and textures.[7]

Minimalist composers, in contrast, responded to a limitless expansion of musical boundaries. They focused on the most basic elements of music and its simple audible process.

[6] Auner, *Music*, 257.
[7] Auner, *Music*, 234.

Chapter 2: BOULEZ, *DOMAINES*

1. Historical Background of the Composer and his Works

Pierre Boulez was born on 26 March 1925 in Montbrison, a small town about fifty-five miles southwest of Lyons. His father, Léon Boulez, was an engineer who worked as the technical director of a steel works. It was a prosperous middle-class family. There were four children: the first-born (also named Pierre) died after a few months in 1920; Jeanne, the beloved older sister, was born in 1922, Pierre in 1925, and Roger in 1936.

Pierre Boulez began piano lessons at age six, by nine he was playing difficult Chopin pieces, and at fourteen he began to visit nearby St. Etienne to study with a more sophisticated musician. He started school when he was seven at the Institute Victor-de-la-Prade, a little seminary in Montbrison, the only establishment for elementary education in the town. For the next eight years, he spent more than twelve hours a day in the seminary. He was a brilliant student, particularly in chemistry and physics.

At sixteen, Boulez enrolled in a course in higher mathematics at Lyons. He encountered contemporary culture and music in this city. In 1942, the Boulez family met Ninon Vallin, a French soprano, at a nearby hotel. Since the young Boulez could play the piano, she asked him to accompany her while she practiced some arias. She was fascinated with the boy's musicality and intelligence. She persuaded Pierre's father that he should take the entrance examination for the Lyons Conservatoire; unfortunately, he failed the exam, so he had to remain a mathematics student in Lyons.

At the end of his first year in Lyons, Boulez asked his father if he could stay one more year to focus on his musical study. At first, he was refused. Then his sister Jeanne persuaded her father to agree to a conditional extra year of study. Boulez had the chance to study piano and harmony as a private student of Lionel de Pachmann, but his father also made him enroll in a

faculty course in the theory of mathematics. At the end of the academic year 1942–43, Boulez made up his mind to leave for Paris to embark on a serious study of music.[8]

Boulez undertook two parallel courses of study during his starting years in Paris—one public and one private. He entered the Paris Conservatoire through George Dandelot's preparatory harmony class. There he met Arthur Honegger's niece and, through her, was introduced to Honegger's wife, Andrée Vaurabourg. He began to take weekly counterpoint lessons with Mme Vaurabourg that lasted until autumn 1945. Boulez was a brilliant counterpoint student. In 1943 and 1944, Boulez also took private piano lessons with a Mme François. Although he worked hard, when he applied for entry into her advanced piano class at the Conservatoire, he was not accepted.

In fall 1944, Boulez entered the advanced harmony class under Olivier Messiaen after having private lessons with the famous composer for a month. The following month he began to attend Messiaen's music analysis class at the home of the film composer Guy Bernard-Delapierre, Messiaen's good friend. There he discovered Debussy's *Jeux*, Berg's *Wozzeck*, and the early works of Schoenberg. He also produced an advanced analysis of *The Rite of Spring* based on Messiaen's ideas, but more a systematic analysis than Messiaen had produced himself. Messiaen

---

[8] It is worth pointing out that there are interesting discrepancies between Boulez's two principal biographers in describing the relationship between him and his father. Joan Peyser, in *Boulez* (New York: Schirmer Books, 1976), describes how Boulez made a clear-cut decision against his father when he decided to stay one more year in Lyons. She quotes Boulez as saying: "Our parents were strong. But finally we were stronger than they," (p. 24) to demonstrate his obsession with dominating power. She also wrote that Boulez refused to take money from home, quoting Messiaen's words, "His father was very angry when he chose music, and his father was a very severe, very closed man. Today Boulez resembles his father in being exceptionally closed." (p. 31) All these quotations depict a broken relationship between Boulez and his father that is used to explain Boulez's musical and personal tendency to erase, or destroy, the past. Peyser remarks that Boulez, by the time he was eighteen, had turned against his father, his country, and everything else that had been held up to him as sacred. On the other hand, Peter Heyworth describes the relationship between Boulez and his father quite differently in a chapter, "The Fifty Years," of the book *Pierre Boulez, a Symposium*, ed. William Glock (London: Eulenburg Books, 1986). He wrote that Boulez's father relented and let his son go to Paris, subsidizing him until he could support himself. He also mentions that Boulez's father was fascinated by the precision and clarity of his son's manuscripts when Boulez started to compose. He remarks: "though his [Boulez's] relations with his father were sometimes tense and never close, he [Boulez] at no time excluded him from his affections." (p. 4 and 5)

recalls Boulez's dramatic change during 1944–45: "When he first entered the class, he was very nice. But soon he became angry with the whole world. He thought everything was wrong with music. The next year he discovered the serial language and converted to it with immense passion, judging it the only viable grammar."[9]

Hearing Schoenberg's Woodwind Quintet, Op. 26, for the first time in his life, must have been a crucial event for Boulez. He said:

> I heard a private performance … in 1945. It was a revelation for me. It obeyed no tonal laws, and I found in it a harmonic and contrapuntal richness and a consequent ability to develop, extend, and vary ideas that I had not found anywhere else. I wanted to know how it was written. Therefore I went to Leibowitz and brought with me other students from Messiaen's harmony class. The first work we analyzed was Webern's Symphony, Op. 21. I was very impressed with this and made copies because the score wasn't available at the time. I felt then the significance of this new language.[10]

This apprenticeship between René Leibowitz and Boulez was brief. Unlike Leibowitz, who was a deeply rooted Schoenbergian, Boulez discovered the entirely new path of music from Webern, who pushed the serial system to its extremes. Soon Boulez abruptly broke his affiliation with Leibowitz, remarking on his teacher's "pedantry" and "being imprisoned by academic techniques" directly extracted from Schoenberg's work.

Boulez commented on his formative period between 1943–46:

> There is little to be learned from professors. Personally, in two years, I learned all I could from teachers. Between the ages of 18 and 21, I discovered the Viennese school, Stravinsky, and Messiaen—that is to say, I discovered a literature I had no idea existed before I was 17. This discovery was very rapid, and that was my good luck. My choices were led first by instinct, then reason. Now more than twenty-five years later, I find those choices have hardly changed at all. The five or six composers who influenced me most then are still those I consider the most important of the time…. It was during those same years that I first saw the works of Klee, Kandinsky, and Mondrian. Again, I knew immediately that these figures were the capital ones in the evolution of painting. They are, in my opinion, still the most important of that period…. That same is true of my first encounters with Joyce and Kafka. I believe I was defined by the period immediately preceding me. What these composers, painters, and writers did enabled me to move quickly on because history had been liquidated by them and one had only to think of oneself.[11]

---

[9] Peyser, *Boulez*, 31.
[10] Peyser, *Boulez*, 32–33.
[11] Peyser, *Boulez*, 27.

During his early student days Boulez wrote several works: a quartet for ondes martenot (afterwards rewritten as a sonata for two pianos), a set of variations for piano left hand, *Notations* for piano, and *Trois Psalmodies* for piano. Boulez disowned all these works and did not give permission for them to be published.

Boulez composed both the *Sonatina for Flute and Piano* and the *First Piano Sonata* in 1946. The *Sonatina* was commissioned by the flutist Jean-Pierre Rampal, who never played it because it was too extreme for him; both parts are full of frantic melodic leaps and rhythmic jolts. It was publicly performed first time in 1957 by the flutist Severino Gazelloni with David Tudor in Darmstadt. Boulez observed that the *First Piano Sonata* was influenced by Schoenberg's Op. 23 as well as Op. 11, especially the third piece.

The *First Piano Sonata* was Boulez's first work based on serialism. He exploits tensions between two contrasting aspects; two movements, two tempos (slow and fast), two-note motifs, two dodecaphonic series, and so on.

Throughout his career, Boulez used poems in his music to express his feelings that were unexplainable otherwise. Since three important works were to result from René Char's poems—*Le Visage nuptial*; Boulez's first important work with a text, *Le Soleil des eaux*; and *Le Marteau sans maiître*—Char was clearly a crucial figure in the composer's artistic development. Boulez started to visit Char when he was working on *Le Visage nuptial* and maintained a close relationship with the poet for ten years. Boulez, asked about his poetic encounter, answered that what he found most important in Char was the extreme condensation of his images. Like Boulez's music, Char's poetry is exceptionally difficult to translate, even for a professional.

Along with *Le Soleil des eaux*, Boulez wrote the *Second Piano Sonata* in 1948. Whereas the row was divided into two parts in the *First Sonata*, the row of the *Second* is divided into four parts, aligning with the four-movement design. The composer's understanding of serialism stands out in this piece. He explained:

> This Sonata is a blunt denunciation of the dodecaphonic starting point and of the formulae deriving from it. No initial series are to be found here, either on the level of pitch or that of rhythm; relatively brief note cells now serve to support true rhythmic themes, here worked and developed according to the principles expounded by Messiaen.[12]

As Boulez remarked, his serial treatment in this work can be defined as the manipulation of tones in a functional, not thematic way. The pianism is far more percussive than in the *First Sonata,* and the work achieved what Boulez wanted—an impression of more violence and more delirium.

After the lyrical works of the late 1940s, the intervening years before the composition of *Le Marteau* show Boulez's compositional movement toward total serialism. In 1952, he published an extended article entitled "Éventuellement" (Eventually) in *Revue musicale.*[13] It clearly shows the composer's intentions at that time.

> We must expand the means of a technique already discovered: that technique having been, up to now, a destructive object linked, for that very reason, to what it has wanted to destroy [tonality]. Our first determination will be to give it autonomy, and furthermore, to link rhythmic structures to serial structures by common organizations, which will also include the other characteristics of sound: intensity, mode of attack, timbre. Then to enlarge that morphology into a coalescent rhetoric.

In the same article, Boulez remarked: "Any musician who has not experienced—I do not say understood, but in all exactness, experienced—the necessity for a dodecaphonic language is USELESS. For his whole work is irrelevant to the needs of his epoch." Boulez paid homage in his article to two composers who influenced him to forge his serial language: Messiaen and Cage. "They alone are the exceptions that I pointed out in the languages' acquisitions [i.e., acquisition of musical languages] after Webern, Stravinsky, Berg, and Schoenberg." Boulez was influenced by Messiaen's serial approach to rhythm. Cage's compositional approach also strongly influenced Boulez at that time. Cage's idea of breaking traditional tonal language and his compositional process without the intervention of personal factors interested Boulez, although this bond between Cage and Boulez was soon ended by Boulez's disagreement with Cage's idea of "chance."

---

[12]Dominique Jameux, *Pierre Boulez* (Paris: Fayard, 1984), 29.

[13] Pierre Boulez, "Éventuellement," *Revue musicale*, no. 212 (1952), 117.

Boulez composed *Polyphonie X* in summer 1951, and it was premiered in October that year at the Donaueschingen Festival. The work, scored for eighteen solo instruments, divided into seven groups, posed formidable problems for performers and audience alike. It was simply unplayable, even by the most skilled German musicians. The reason might have been Boulez's lack of knowledge of how to handle an instrumental ensemble or the unfamiliar syntax of the composition for the musician at that time. The audience's reaction to this work was a great scandal with mixed reactions of shouts, caterwauling, booing, animal noises, and enthusiastic bravos.

Before writing *Polyphonie* X, Boulez had already written the first *Structures* in the spring of that year. On 4 May 1952, *Structures Ia* was performed by Messiaen and Boulez at the Comédie des Champs-Elysées. This three-and-a-half minute work became a milestone in postwar music. Few works have been quoted, referred to, and analyzed like this piece. Boulez took his teacher's work *Mode de valeurs et d'intensité* as foundation serial material. However, Boulez complicated it considerably by an intricate mechanism of multiplicity to transform even the smallest aspect of each musical event. Although it is not exactly true, Payser wrote, 'each pitch never recurs with the same duration, the same intensity, or the same attack.'[14] Boulez said: "Messiaen dealt with modes which were static. Everything was held together from beginning to end. When I took his material, I united the various characteristics and made them work independently."[15]

Between 1951 and 1952, Boulez was an apprentice of the Groupe de Recherche de Musique Concréte (GRMC), the first electroacoustic music studio, founded by Pierre Schaeffer. The GRMC attracted many notable composers, including Messiaen, Stockhausen, Varèse, and Xenakis, to explore the manipulation of sound with the tape recorder and the phonogène, a machine capable of modifying sound structure produced by a tape recorder. Boulez composed his

[14] Peyser, *Boulez*, 69.
[15] Peyser, *Boulez*, 69.

two *Etudes*, concerned with the manipulation of instrumental sound played on the cello. Although the result was not favorable to Boulez's taste—he thought the tools were far too rudimentary and he remained scornful until a machine was capable of leading to new and valuable compositional strategies—Boulez's brief connection with the GRMC can be understood as his effort to manage the problem of rigidity in serial music.

Late in 1953, Boulez created a series of chamber concerts, to be named Domaine Musical in 1955, that would serve as a means of communication between contemporary composers and a public interested in its time.[16] Boulez clearly stated his aims in a foreword to the inaugural season of the concert; there would be three levels of activity:

> First, the reference level is to include works which have particular relevance for our own time; hence the isorhythmic motets of Machaut and Dufay, the chromaticism of Gesualdo and the formal inspiration of *The Musical Offering* by Johann Sebastian Bach. Second, the educational level is to include contemporary works that played an essential role in musical evolution (Stravinsky, Bartók, Varèse, and Debussy[17]). Third, the research, or discovery, level is to place recent works by composers who are at least artistically honest, if not manifestly talented, masters of their art, and whose integrity is a guarantee of their essential creativity.[18]

While launching and running Domaine Musical, Boulez finished *Le Marteau sans maître* (1954), which he had worked on for two and a half years. Boulez used Char's poems that belong to the period of, in the poet's own words, "the irreconcilable domain of Surrealism," to form the literary basis of *Marteau*. In 1955 Boulez remarked that "*Marteau sans maître* is my *Pierrot Lunaire*." The reference to Schoenberg's famous work is intentional and direct; both pieces have a series of short movements for voice and an instrumental ensemble that changes its instrumentation with each movement, both pieces require the same number of musicians to perform (seven), and both composers arranged the movements to form three cycles. In *Marteau* Boulez did not use any extended notational technique, but the music is much more complex; constantly fluctuating tempo, meter changes almost every measure, convoluted rhythm, all

---

[16] Peyser, *Boulez*, 109.

[17] It is interesting to notice that Boulez intentionally omitted Webern from the list, even though his compositional style greatly affected Boulez's composition.

[18] Boulez's foreword for the inaugural season of Domaine Musical, in Jameux, *Pierre Boulez* 62.

combined with Boulez's pitch-class multiplication, a pitch-generating method using segmental subsets as levels to transpose each segmental subset of a series, to open up the possibility of his rigorous serial syntax.

In 1949 Boulez had a chance to listen to Cage's *Music of Changes*, in which coin-tossing determined all the elements of every note played. Boulez's response to Cage's compositional method in a letter he wrote to Cage was rather cold: "By temperament, I cannot toss a coin…. Chance must be very well controlled. There is already enough unknown."[19] After Cage introduced "chance" composition by tossing a coin, many composers emulated the concept of chance in their works, whether primarily focusing on the composition level, the performance level, or both. Like the space race between the United States and the Soviet Union in the Cold War period, some composers competed with each other to pioneer and to excel in the open-form genre. Boulez was one of the principal competitors in this saga.

In 1957 Boulez wrote an article titled "Alea" to proclaim his aesthetic stance on chance composition.[20] He explains his views on different types of chance and the necessity of "controlled chance." As his article stated, there were reasons to devise his own chance, but it is still interesting to think about the pressure composers felt at that time to be a pioneer of a new compositional language. On the other hand, Boulez's intolerance of the lack of control in his life and his music might have been a reason to make controlled chance. It is still uncertain about what the most influential factors were that made Boulez decide to devise controlled chance. But lots of serial composers sought remedies to alleviate the rigidness of total serialism, and chance was an attractive device to achieve their purpose.

Another explanation of why Boulez finally embraced chance would be his confrontation with Mallarmé. Boulez's major open-form works (*Third Sonata*, *Pli selon Pli*) were closely connected with the poems of Stéphane Mallarmé (1842–1898), a French symbolist poet. Boulez

---

[19] Peyser, *Boulez*, 82.
[20] Pierre Boulez, "Alea," *La Nouvelle revue française* 59 (November 1957): 839–57.

said he was drawn to Mallarmé because of the "density of his texture, because of the obscurity of his language."[21]

While Boulez was working his *Third Sonata*, *Le Livre*, a collection of Mallarmé's poem, was published. Boulez was deeply affected by this book. As a result, Boulez's *Third Sonata* closely follow the characteristic forms of the poems—the idea of multiple routes, reversible and variable, freely combinable separate sheets—offering performers the chance to exercise their own imaginative input while maintaining the composer's control of the work. The *Third Sonata* is one of Boulez's incomplete works; in fact, over half of his compositional output—left to be finished, revised, or modified—is regarded as incomplete. It was supposed to have five movements, but only two complete movements (*Constellation* and *Trope*) were published. Boulez was notorious for his revisions to his works and strict standards on publishing them. He only gave permission to publish what he wanted; he never allowed the works of his youth period to be published. Therefore, it could be that Boulez was not satisfied with his compositional output. On the other hand, the compositional attitude of Mallarmé to his work *Livre* could be a key to explain Boulez's compositional tendencies of continual revision and incompleteness. In 1866, Mallarmé indicated that he had laid the foundations of a magnificent work (*Livre*) and it would take twenty-five years to compose. In 1885, he decided to leave it incomplete, although he worked continuously on it until the latter

years of his life.[22] Mallarmé's long and arduous composition process and embrace of work-in-progress are strikingly similar to Boulez's compositional trajectory.

Boulez composed *Pli selon Pli* in 1957–62, but taking into account the later reworking of *Improvisation III* in 1989, the entire composition period of the work can be thought of as 1957—89.[23] *Pli selon Pli* has five movements—*Don, Improvisation I, Improvisation II, Improvisation III,*

---

[21] Peyser, *Boulez*, 117.

[22] Jameux, *Pierre Boulez*, 92.

[23] Further information about the complicated genesis of the work can be found in Jameux's book, pp. 107–9.

and *Tombeau*—using different instrument combinations with voice for the inner three movements. It is the longest work of Boulez and is also considered a central work of the composer and a turning point in his career. As in the composer's *Third Sonata*, Mallarmé's influence can be easily found in *Pli selon Pli*; for example, the subtitle of the work is *Portrait of Mallarmé*. The poem of Mallarmé's used in each movement evokes a sense of despair and death. *Pli selon Pli* was considered another example of a work-in-progress for a long time, because of its fragmentary publishing and the composer's various revision stages over a long period. It finally received its definitive form in 1989.

In 1957–62, Boulez also started several other important works, including *Poésie pour pouvoir*, *Structures* Book 2, and *Figures–Doubles–Prismes*. There were also attempts to produce small works during this time. One of the three minor works was *Strophe* (1957), for flute and small instrumental ensembles. The presentational idea of the work was that the soloist changes position within the ensemble, thus anticipating *Domaines* by some ten years, but the work was unfinished. Boulez also taught at Darmstadt, Basel, and Havard during these years.

Between 1963 and 1973, Boulez established himself as one of the great orchestral conductors of the world. He had from 1946 to 1956 in the orchestra pit of the Théâtre de Marigny. He also had conducting opportunities with Domaine Musical, for which he organized almost everything. Sir William Glock, the BBC Controller of Music, also gave opportunities to Boulez to have a connection with the BBC. The three-year contract took effect from January 1971 and was to be renewed in 1974. He was chief conductor between 1971 and 1975, continuing as chief guest conductor until 1977. During his residence Boulez left Tchaikovsky— Boulez never played Tchaikovsky because he deeply despised him—Dvořák, and other traditional composers such as Brahms and Beethoven to colleagues more experienced, or more suitable, in this kind of repertoire.

Boulez agreed to take the position as music director of the New York Philharmonic from the 1971–72 season, and that role lasted until 1977. Each year he stayed four months in London, four months in New York, and four months composing in Baden-Baden. In New York, Boulez's repertoire was similar to that of London: mostly twentieth-century pieces that he knew well and wanted to promote. He left the bulk of the so-called "museum" repertoire to other conductors.

Naturally, Boulez's compositional output decreased while he was occupied by his conducting career. Boulez had never been a prolific composer, although he had never relinquished his compositional duty either. He explained his ways in composition: "I think quickly, but it takes a long time for my thoughts to ripen. I am a long wave reactor. I don't meet things easily, but I don't forget them easily."[24] Boulez began *Domaines* for clarinet in 1961 but did not pick it up again until 1968; the unfinished *Eclat/Multiples*, which he started to compose in 1971 as an extension of *Eclat*, was begun in 1965; *Cumming ist der Dichter* was composed in 1970 but inspired by Cage's introduction to the American poet e.e. cummings in 1952; and … *explosante–fixe*…, begun in 1971, was revised several times and finally finished in 1993.

Boulez stopped conducting in 1977 because of his wish to return to composition. But then the administrative work and various research projects of IRCAM occupied most of his time. It caused snide laughter among the skeptics who questioned Boulez's creative ability as a composer. At the end of 1979, however, Boulez announced that he was reworking *Poésie pour pouvoir*, a piece premiered in 1959 for instruments and electro-acoustic apparatus. The result was *Répons* (1980–84) for instrumental ensemble, soloists, and electro-acoustic equipment. There are three different versions of *Répons*. All of them are concerned with the spatial presentation of performance material. Boulez took advantage of IRCAM technology, including the use of the 4x, a synthesizer made by the electro-acoustic department of IRCAM, to create interplay of human

[24] Peyser, *Boulez*, 238.

and mechanical elements in an elegant and eloquent way. The reception of Boulez's new work was unanimously favorable.

Boulez did not compose many major works after the completion of *Répons*; he spent his time mainly revising existing scores. He composed *Dérive* (1984) for seven instruments—flute, clarinet, violin, cello, vibraphone, and piano—to mark the occasion of Glock's retirement from the BBC. The compositional material of a work derived from *Répons*, *Dialogue de l'ombre double* (1985) for clarinet and electro-acoustic equipment, was written for the sixtieth birthday of the celebrated Italian composer Luciano Berio. Boulez used materials from his *Domaines* and Berio's *Chemins* to compose. *...explosante—fixe...* (1991–93), composed for MIDI-flute, ensemble, and live electronics at IRCAM.

In later years, Boulez relinquished electronics in his compositions. *Sur Incises* (1996–98) was written for three pianos, three harps, and three percussionists. It derived from *Incises* (1993–2001), a short piece written for a piano competition. *Notation VII* (1999) is the longest work among the completed orchestral *Notation* series. *Dérive 2* (1988–2006) was initially a short work dedicated to Elliott Carter's 80th birthday; by 2006, it had been expanded into a 45-minute work for eleven instruments that is regarded as Boulez's last completed major work.

Undeniably, Boulez was one of the most important composers, music critics, and conductors of the twentieth century. As a conductor, he left great recordings of twentieth-century masterpieces including works by Schoenberg, Webern, Berg, Stravinsky, Bartók, and himself. His articles made a significant impact on carving the path of the twentieth-century classical music, and are still widely read and quoted.

From as early as the 1970s, many people reported the difficulty of finding new, worthwhile compositions. Gilbert Amy, who took over Boulez's post at the Domain Musical in 1967, disbanded the organization in 1971 because he could not come up with any works that audiences wanted to hear. Alfred Schlee at Universal Edition reported that there were "no young artists who are anything but derivative of the now middle-aged ones." Otto Tomek, who

organized the Donaueschingen Festival in 1972, said "Everyone wants to hear from the young… But the fact is there is no style today."[25]

Many composers in the twentieth century have been completely forgotten. Few had any staying power. Lots of composers followed the path that Boulez had opened, but not many few can be compared to him in importance and influence.

1. Compositional Analysis of *Domaines*

i. Mallarmé and Boulez

It might sound odd to begin an analysis of an instrumental work by examining its literary connection. In Boulez's music, however, it is crucial to know the literary background of the work, if there is an applicable literature, to understand the music.

In his essay entitled "Sonata, que me veux-tu?" Boulez overtly mentioned the influence of the French symbolist poet Stèphane Mallarmè on his compositions. He acknowledged: "It must be our concern in future to follow the example of Joyce and Mallarmé and to jettison the concept of work as a simple journey starting with a departure and ending with an arrival."[26] As mentioned in the previous chapter, Mallarmé's influence can be clearly found in Boulez's music between the mid-1950s and early 1960s.

Domaines shares many characteristics with Mallarmé's masterpiece, "Un Coup de dés jamais n'abolira le hasard" (A throw of the dice will never abolish chance). Jacques Scherer, who published *Le Livre*, in which "Un Coup" appears, explained the value of the compilation in the Preface:

---

[25] Peyser, *Boulez*, 252.

[26] Susan Bradshaw, "The Instrumental and Vocal Music," in *Pierre Boulez: a Symposium*, ed. William Glock (London: Eulenburg Books, 1986), 144.

> It is obvious that this pursuit of infinity cannot be limited by the linear, unidirectional and fixed ordering of the ordinary book. The truly literary expedient is to enable the constituents of the book—pages, phrases, verses, words, and even letters—to be moved freely and imaginatively, but not arbitrarily, within the *Livre* itself.

The typological similarities between the poem and Boulez's *Domaines* are worthy of note. The poem is spread over twenty pages, in various typefaces and sizes of letters, amid a liberal amount of blank space. As shown in Fig. 2-1, each pair of facing pages is to be read as a single panel. The text flows back and forth across the two pages, along with irregular lines. In the clarinet solo part of *Domaines*, Boulez interspersed six cells, which can be read horizontally or vertically, on each page. Like Mallarmé's extensive note for a recitalist on how to read his poem in front of an audience, Boulez made certain rules for playing *Domaines*; these rules will be mentioned in detail later.

If both pieces, the poem and the music, had been written in traditional notation, they could have been contained in significantly fewer pages. Abandoning conventional syntax in the poem created more pages because of the scattered blocks of words that can stand alone in value, and can also float freely to be combined, or interpreted, with different isolated word(s) to make a more continuous and conventional poetic line. Boulez must have been fully aware of these characters of the poem. He accepted these ideas in composing *Domaines*. The result (as shown in Fig. 2-1), was a similar appearance to the poem: an unconventional way of notation throughout the piece abolishes the linear progress of the music; scattered music cells can be read in multiple ways or stand alone as a single distinctive sonic event.

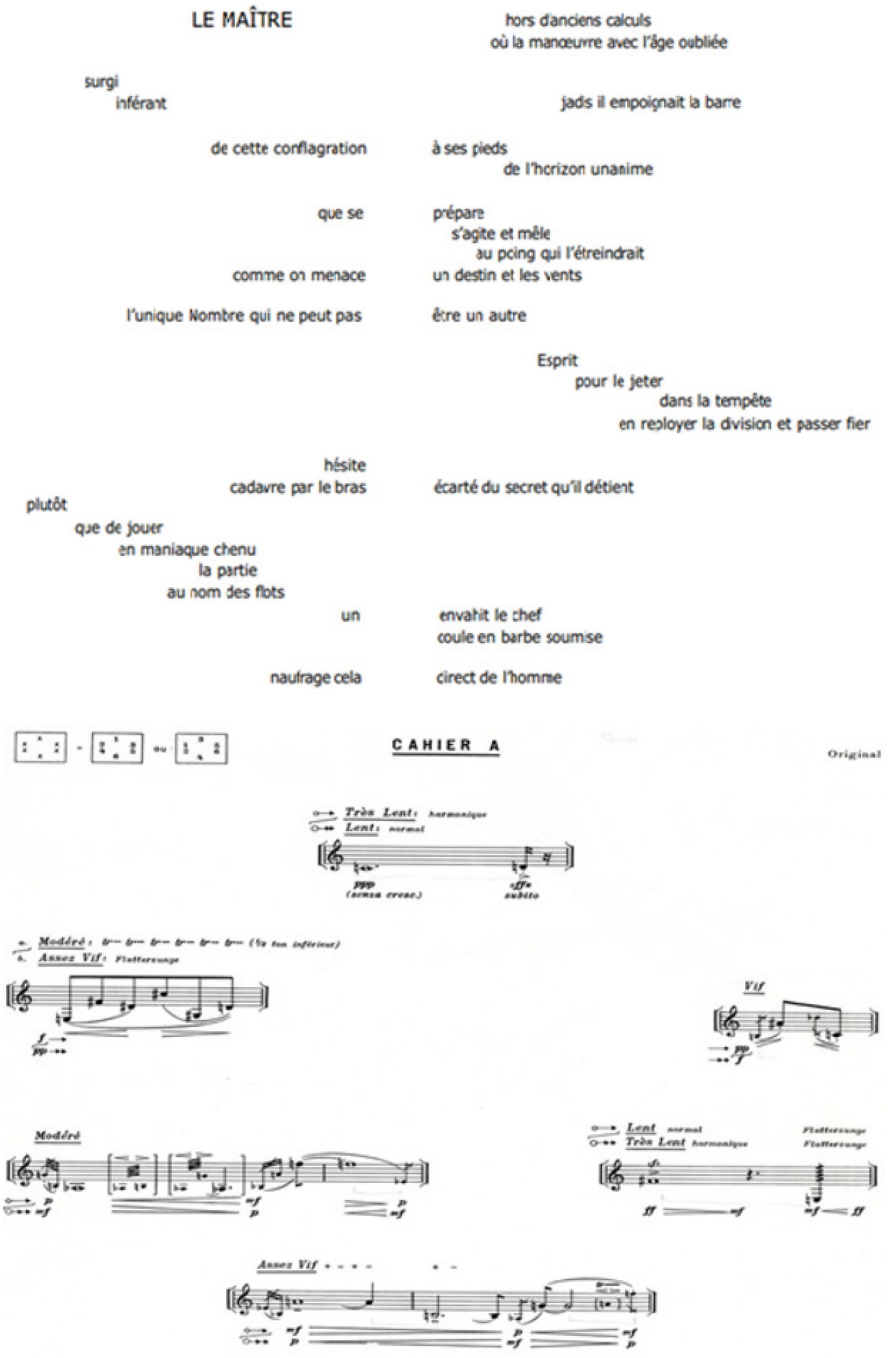


Figure 2-1. Typological similarity between *Un coup de dés* (upper) and *Domaines* (below)

As the title of the poem indicates, the infinite possibility of the syntax in Mallarmé's poem is transformed into a controlled chance piece in Boulez's hands. The composer also refers to the "dice" in the title of the poem by exploiting the variable possibilities of the number six in

Domaines. Indeed six pervades almost every compositional level, from the structure of the work to the smallest dynamic indication, as we will explore in this chapter.

ii. Form and structure of *Domaines*: Variations of variations

Boulez absorbed other contemporary composers' compositional ideas to develop his own compositional idioms in *Domaines*. Stockhausen's *Klavierstuck XI* presented the concept of mobile form for the first time in 1956. Nineteen separate musical events are scattered on a single page of the score by the composer. The arrangement of these events depends entirely on the performer's choice, including not only the order of the events, but also repeats or omissions of certain events during the performance. In *Domaines*, however, Boulez made a detailed list of rules to control various levels of undetermined performance elements.

Boulez used unusual terms such as *cahier* and "cell" in *Domaines*. The word *cahier* in French means a compositional sketch; in this case it contains six musical "cells," a word referring to the smallest structural and functional sound units in *Domaines*. Here is part of the performance instruction of *Domaines*:

> With orchestra, the clarinetist first plays the six "cahiers" *Original* [i.e., the six original cahiers] in whatever order he/she may decide. After each "cahier" the corresponding instrumental group plays the sequence *Original*. At the end of the sixth sequence *Original*, one of the instrumental groups randomly chosen by the conductor proceeds to the sequence *Miroir* [Mirror]. After this sequence, the clarinetist plays the corresponding sequence *Miroir,* and similarly, the remaining sequences and "cahiers" should follow. Without the orchestra, the clarinetist plays the six "cahiers" *Original* in whatever order he/she may decide. After the last sequence *Original* the clarinetist plays the six "cahiers" *Miroir* in whatever order.

According to what he wrote, Boulez allowed an equal level of limited freedom, "controlled chance" in his own definition, for the soloist and the conductor in deciding the order of each sequence. Unlike the case of *Klavierstuck XI*, the repetition or omission of any musical event, or *cahier*, is not allowed in *Domaines*.

Domaines was composed first as a clarinet solo, but it is apparent from the early sketches of the work that Boulez intended to write a piece for a solo instrument and groups of ensembles. The solo clarinet part contains all the important musical ideas, and each corresponding ensemble group develops those ideas.

Using a single panel of a poem comprised of a pair of consecutive pages, Boulez wrote six pairs of c*ahiers* (*Original* A–F and *Miroir* A–F) for the clarinet solo part. Each pair of corresponding *cahiers*, *Original* A and *Miroir* A, *Original* B and *Miroir* B, and so on, mostly shares same pitch and rhythmic materials, with some exceptions. Boulez later added six different ensembles to correspond to each clarinet *cahier*, making another layer of a pairings between the solo part and the ensembles, as shown in Table 2-1.

Table 2-1. Instrumental ensembles of *Domaines*

A	Trombone Quartet
B	String Sextet
C	Duet (Marimbaphone, Double bass)
D	Trio (Oboe, Horn, Guitar)
E	Quintet (Flute, Saxophone, Bassoon, Trumpet, Harp)
F	Bass clarinet

The six ensemble groups are placed on the apexes of a hexagon surrounding the conductor, as shown in Fig. 2-2. It can be observed that if ensemble groups are ordered by the density of each ensemble—in other words, by the number of players—pairs of successive groups (solo and duo, trio and quartet, quintet and sextet) are positioned facing each other within the hexagon. This oppositional ensemble position has a close relationship with the disposition of the six different cells of each cahier in the clarinet solo part.

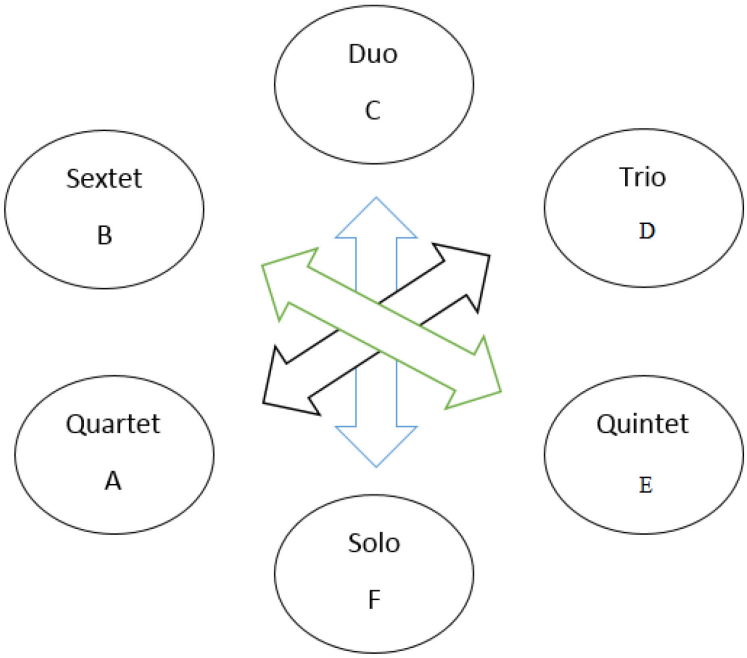


Figure 2-2. Disposition of the six instrument groups in *Domaines*

Each *Cahier* of the solo part consists of six cells. The disposition of these cells in each *cahier* is different in both *Original* and *Miroir,* as shown in Figure 2-3.

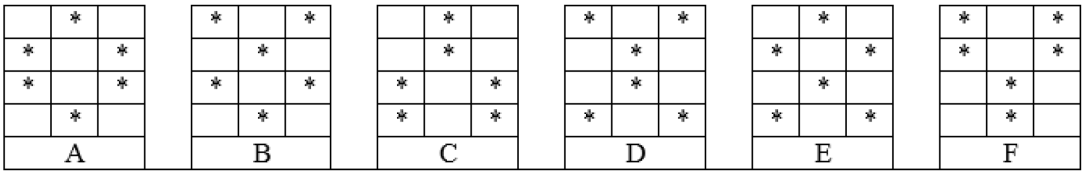


Figure 2-3. Disposition of the six cells in the clarinet solo (*Original*, *Miroir*)

Notice that the shape of the cell position of *cahier* A in both *Original* and *Miroir* is a clear hexagon shape, although the shape varies in other *cahiers*, creating variations of the hexagonal cell disposition.

As mentioned before, the corresponding *Cahiers*, *Cahier* A *Original,* and *Cahier* A *Miroir*, for instance, share the same six cells with identical pitch contents in each, but the position

of the cells in *Miroir* is different from the corresponding *Original*. A couple of rules of the variation regarding the cell disposition can be found by examining the corresponding *cahiers*. 1) The two cells positioned in either the left column or the right column of the each *cahier* move diagonally to switch places to the opposite column. 2) The two middle cells move only vertically to switch position within the middle column. Figure 2-4 shows these rules. In *cahier* B *Miroir*, for example, cells 2 and 4 diagonally switch position, as do cells 1 and 5, whereas cells 3 and 6 switch vertically.

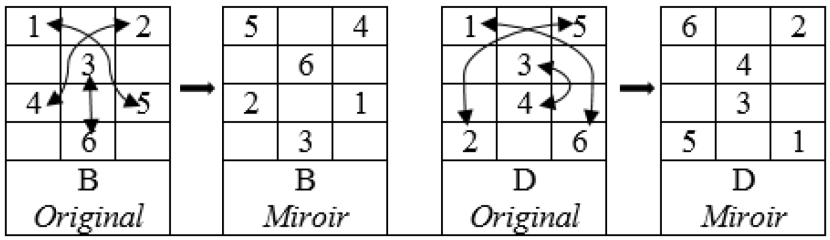


Figure 2-4. Examples of switching cells between corresponding cells in *cahier* B and *cahier* D

Another rule of variation governing the order of the cells can be found in a performance instruction by the composer: "each *Cahier* has six cells and the six cells on each page may be read sequentially in one of two ways, either vertically or horizontally. If one of the readings is chosen to play *Original*, another way of reading must be chosen to play *Miroir*, and vice-versa." Simple reading directions can be drawn as shown in Fig. 2-5. If the soloist decides to use the horizontal way to play *cahier* B *Original*, for example, the order of the cells will be (123456), and the order of the corresponding *cahier* B *Miroir* will be (526341). In contrast, if the soloist chooses the vertical way to play *cahier* B *Original*, the order of the cells will be (143625) and the order of corresponding *cahier* B *Miroir* will be (546213).

Figure 2-5. Examples of horizontal reading (left) and vertical reading (right)

The permutation possibility of the sequence in both *Original* and *Miroir* is $(6!)^2 =$ 518,400 different ways. If the two different ways of reading in the solo part are also considered on top of the shuffling possibility of the *cahiers*, the variational possibility of the work double to 1,036,800. These numbers do not even include the optional variations in the solo part. Thus, it would be a fair assumption that every performance of *Domaines* is unique in structure.

It is worth speculating that Boulez might have had a plan to create maximim spatial movement in both the physical movement of the soloist and the movement of the sound between six ensembles. When *Domaines* is performed with the ensemble groups, for example, if the order of *cahiers* follows the order of instrumental density of each ensemble, as shown in Fig. 2-6—solo, duo, trio, and so on in the case of increasing density; or sextet, quintet, quartet, and so on in the case of decreasing density—the spatial movements of the soloist and the spatial sound movement between ensembles will be maximized because of the placement of the ensembles.

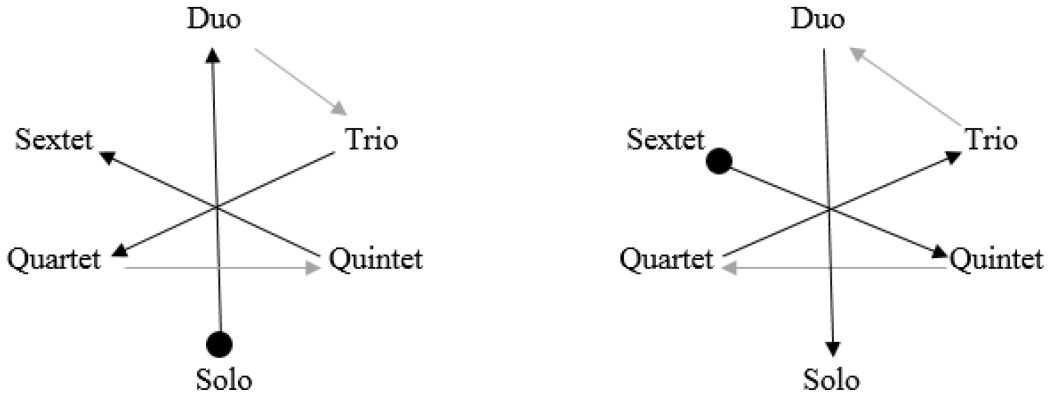


Figure 2-6. Examples of spatial movement in increasing density (left) and decreasing density (right) of ensembles

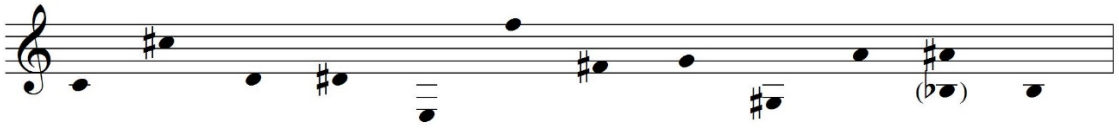
As discussed before, when the order of the *cahiers* follows the order of the instrumental density, a similar movement pattern can be found between the movements of the six cells in each solo *cahier* (Fig. 2-4) and the spatial movement of the soloist and six ensembles (Fig. 2-6). In both cases, the left and right cells/ensembles are diagonally connected with the opposite side, whereas the middle two cells/ensembles are vertically connected. It is, of course, a mere example of the possible connections between a movable aspect and a fixed structural aspect of the work. The point is that, even though there are almost limitless possibilities to create the order of the work, there are also many compelling possibilities for presenting the work in a unique, logical way to connect small details of the work with a larger structural view. As Boulez did not like disorder and tried to govern the uncontrollable aspects of an open form by setting up rules, it would be the responsibility of each performer/ensemble to find a logical and comprehensible way to make the performance of *Domaines* as coherent, unique, and attractive as possible. Whether the choice of the order comes from a structural viewpoint or a sheer sound point in relation to the continuity/discontinuity of the sound events, an understanding of the structural variations and the combinatorial possibilities of the work is worth developing.

The clarinet solo part can be played alone because it contains all the compositional ideas to construct the whole piece. Therefore, this paper will focus on analyzing the clarinet solo part under the two headings of pitch and rhythm. Also for convenience of the reading, the numbering of cells in each *cahier* follows the horizontal way of reading here.

iii. Pitch[27] and rhythm of *Domaines*

a. Registral invariance

There is a high degree of registral invariance within each cell, or sometimes even within an entire *cahier*.

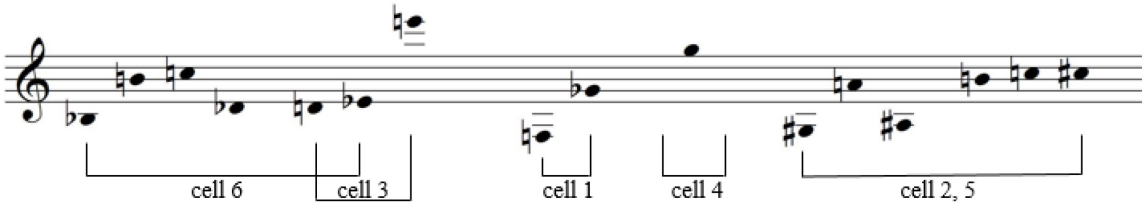


Example 2-1. An example of registral invariance in *cahier* A

As shown in Ex. 2-1, each group of twelve tones in *cahier* A has its own pitch position, and the register of each note remains the same as the music proceeds. For example, pitch-class F always appears on the fifth line of the staff (F5), and E always appears a minor sixth below middle C (E3) in *cahier* A. There is one exception: A# and Bb, enharmonic notes, are placed an octave apart (A#4 and Bb3). Boulez spelled the two notes differently in this case.

[27] C. Catherine Losada's recent article contains information of the pitch multiplication method used in *Domaines*. "Between Freedom and Control", *Journal of Music Theory* volume 61, no. 2 (October 2017): 205-214.

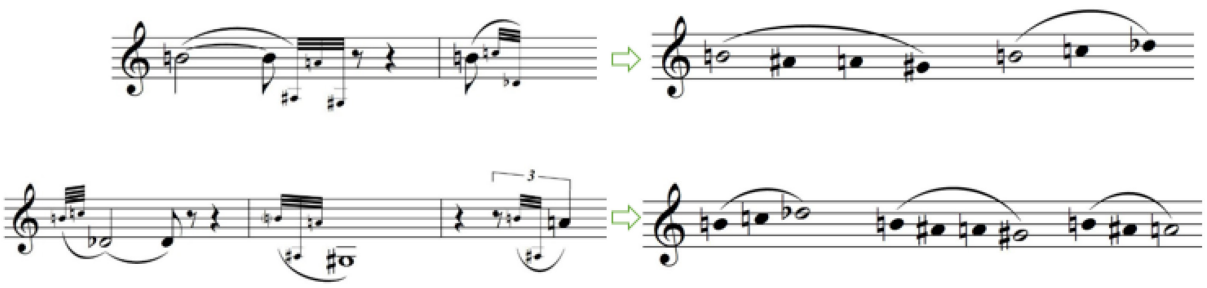
Another good example of registral invariance can be found in *cahier* C, as shown in Ex. 2-2. Some cells share the same pitch materials—for example, cells 3 and 6 share D4 and Eb4. Nevertheless, the position of each of the twelve notes remains exact throughout *cahier* C. (C#5 and Db4 are an octave apart and spelled differently, as in the case of A#4 and Bb3 in *cahier* A.)



Example 2-2. Registral invariance in *cahier* C *Original*

b. Pitch-classes

From the foreground view, the pitch materials of the clarinet solo part are scattered all over the staff, making a highly disconnected melody line. In contrast, the pitch-class realization of the solo part produces a static, and sometimes also continuous, character of pitch material within each cell.

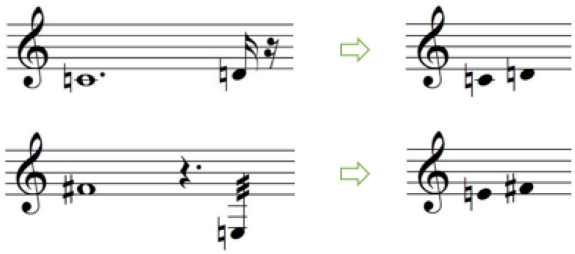


Example 2-3. Pitch materials of cell 2 (above) and cell 5 (below) in *cahier* C *Original* and its pitch-class realization

Two general characteristics of the pitch material of the entire solo part can be observed in Ex. 2-3: jagged melody lines and a limited use of pitches in each cell. These two pitch characteristics prevail throughout the work. Even though increased use of the pitch material within a cell can be found in *cahier* B and *cahier* F, each cell of the solo part generally contains a limited number of pitches—sometimes just one note in the cell, as in cell 4 of *cahier* C.

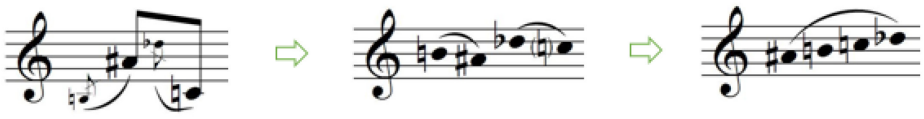
In Ex. 2-3, all the pitch classes move chromatically and continuously to adjacent pitch classes. In fact, all six cells of *cahier* C are constructed of chromatic pitch materials. Cell 2 shows the compositional possibility of the chromatic movement from the main note B4. The first bar of cell 2 has downward chromatic movement from B, whereas the second bar of the same cell has upward chromatic movement. Cell 5 displays another compositional possibility of landing on the main notes from the ornamental note B. The pitches in cell 5 can be divided into three parts: B, C, Db; B, A#, A, G#; and B, A#, A (A being also part of the second group). This threefold division of pitches in cell 5 is clearly recognizable because of the rests between the pitch groups and the pattern in which only the last notes of each group have actual note values. All other notes, except for the three landing notes of Db, G#, and A, are grace notes that make brief chromatic approaches to the three ending notes.

Another type of pitch-class combination can be found in *cahier* A. Unlike the use of only chromatically related pitches in *cahier* C, the six cells of *cahier* A contain three different pitch-class contents: whole tone (cells 1 and 5), half tone (cell 3), and a mixture of whole tone and half tone (cells 2, 4, and 6), making a nuanced pair between odd-numbered cells (one pitch-class content) and even-numbered cells (mixture of two pitch-class contents). Two cells of *cahier* A, cells 1 and 5, have only two notes in each. As a subtle variation between these two cells, notes C and D in cell 1 are written as an actual whole-tone interval, whereas notes F# and E in cell 5 are an octave apart, making a major ninth. However, the pitch-class realization helps to understand the common whole-tone relationship between the two cells, as shown in Ex. 2-4.

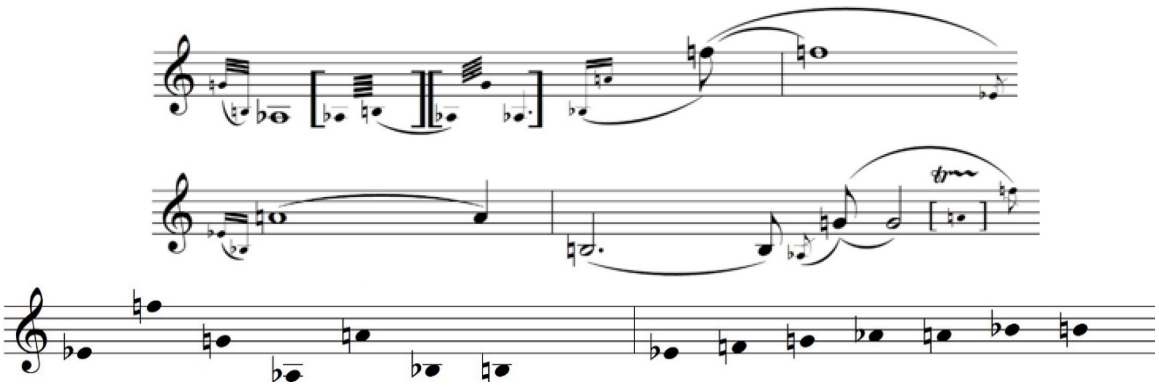


Example 2-4. Whole-tone relationship of cell 1 (above) and cell 5 (below) in *cahier* A *Original*

The order of pitches in *cahier* A is dissimilar to the continuous stepwise order of the pitch-classes in *cahier* C. The order of most pitches is shuffled within each cell in *cahier* A. The chromatic four notes of A#, B, C, and Db are in the mixed order of B, A#, Db, and C in the score (cell 3 of *cahier* A), as shown in Ex. 2-5. The rest of the cells in *cahier* A have a similar character of mixed pitch order. In each cell of *cahier* A, the use of continuous diatonic/chromatic pitch series can be confirmed as the fundamental materials of the composition. The mixture of whole tone/chromatic pitch series can be found in cells 2, 4, and 6. In fact, as shown in Ex. 2-6, cells 4 and 6 share exactly the same pitch set, but the order of pitches is different in each cell.



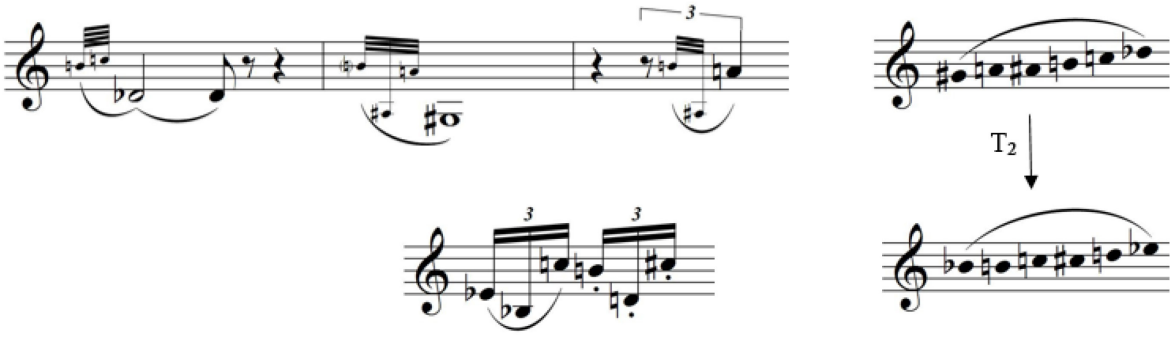
Example 2-5. Written score (left), actual order of pitch-classes (middle), and chromatic realization (right) of cell 3, *cahier* A *Original*



Example 2-6. Cell 4 (above), cell 6 (middle) of *Cahier* A, the pitch set of both cells (below left) and pitch-class set of both cells (below right)

c. Recurrence of pitch-class sets

Certain pitch-class sets are used more than once in each *cahier*, and in many cases, the actual pitches remain in the same positions in different cells, as mentioned above in connection with Ex. 2-6. In contrast, the actual pitch contents may be different between two cells, but these cells share the same pitch-class set through the transposition of the pitch-class set (see Ex. 2-7).



Example 2-7. Transposition of the pitch-class set 6-1 (012345) between cell 5 (above) and 6 (below) in *cahier* C *Original*

In each *cahier*, at least two cells share the same pitch-class set, as shown in Table 2-2. This idea of "pair"—sharing the same pitch-class set between two different cells, in this case—can be observed throughout the composition. More examples of the idea of "pair" and variations among each pair will be discussed in the following section.

Table 2-2. Repeated pitch-class sets[28]

Cahier A: cells 4 and 6 share 7-9 (0123468)
Cahier B: cells 1 and 3 share 9-1 (012345678)
Cahier C: cells 2, 5, and 6 (T_2 of cell 2 and 5) share 6-1 (012345)
Cahier D: cells 1, 5, 2 (T_9 of cells 1 and 5) and 3 (T_6 of cells 1 and 5) share 5-1 (01234)
Cahier E: cells 1 and 3 share 5-9 (01246)
Cahier F: cells 1 and 4 share 9-7 (01234578T) and cells 2, 3, and 5 share a complete twelve-tone aggregate

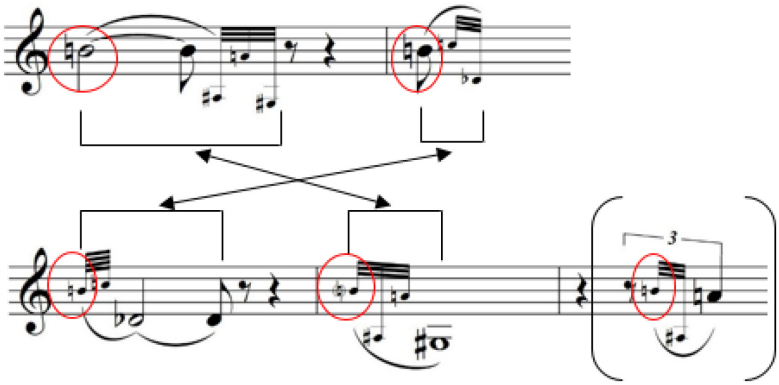
d. Pairs and variations

In Ex. 2-7, different two cells sharing the same pitch-class set are connected by the pitch transposition of T_2. Cells 5 and 6 can be considered a pair, and T_2 can be considered a device to create a certain type of variation of the pitch between two cells. All transpositions of cells mentioned in Table 2-2 can therefore be understood as examples of paired cells, using a certain level of transposition between each pair to make variations of the pitch.

Different types of pair and different types of variable factors can be found by looking at the score. First, let us look at the two cells shown above in Ex. 2-3. As mentioned before, the two cells share the same pitch-class set. However, Boulez divided each cell into two pitch groups and reversed the order of groups between cells 2 and 5 as a means of variation and repetition. If the last group of cell 5—where the bracketed note group B4, A#3, A4 is shown in the bottom staff of Ex. 2-8—is considered an omitted repetition of the second pitch group, B4, A#3, A4, G#3, then the pitch material of cell 5 is an exact repetition of cell 2. The order of pitches in each group

[28] Each shared pitch-class set in Table 1-7 is named after its Forte number and its prime form. Tn means transposition by a pitch-class set at level n.

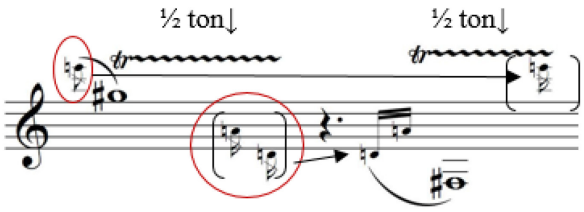
remains the same, but the order of the two pitch groups is reversed. Also, all five-pitch groups in cells 2 and 5 start with the note B4. B4 is treated as the main note in cell 2. Only B4 has actual note values, which are considerably longer than the others. On the other hand, B4 in cell 5 is all grace notes that start brief ornamentation sections to approach the long notes of Db4, G#3, and A4, which all are used as grace notes in cell 2. Thus, the composer made another variation by using the substitution of two different note types, regular notes, and grace notes between cells 2 and 5 of *cahier* C *Original*.



Example 2-8. Reversed order of two pitch groups between cell 2 (above) and cell 5 (below) of *cahier* C *Original*

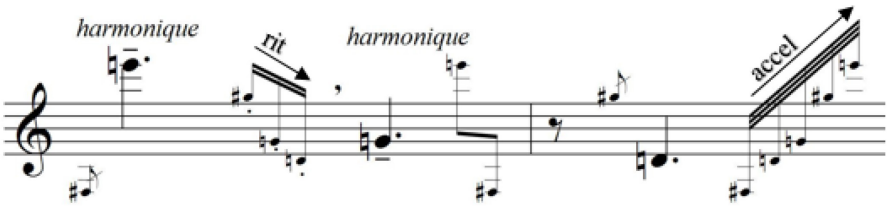
Let us look at another example. Unlike Ex. 2-8, cells 1 and 3 of *cahier* E do not share the same pitch-class set. Cell 1 is comprised of D4, E6, F3, F#3, G5, G#5, and A4, making a pitch-class set of 7-2 (0123457), whereas cell 3 is comprised of D4, E6, F#3, G4, and G#5, making a pitch-class set of 5-9 (01246). However, a link can be found between cells 1 and 3 of *cahier* E. Cell 1 is a kind of musical palindrome: the pitch does not read the same backwards as forwards, but the order of the two different note types, grace notes and long notes, does read the same backwards as forwards. Cell 1 can be divided into two pitch groups. A dotted-quarter rest in the middle makes a clear division point between the two long notes G# and F#, with three grace notes

surrounding each long note. The switch of obligatory grace notes and optional grace notes between the two groups can be seen as a means of variation between the groups. An obligatory grace note E6 in the first group becomes an optional grace note in the second group, as shown in Ex. 2-9.



Example 2-9. Cell 1 of *cahier* E *Original*

Cell 3 of *cahier* E, shown in Ex. 2-10, presents a different variation of switching note types between multiphonics and a regular note. Cell 3 can be divided into two parts. Even though there is no time signature in the solo part, Boulez used bar lines to indicate a structural distinction between the pitch groups. Therefore, the bar line in cell 3 of *cahier* E can be understood as a structural division point. In the first bar, the first five notes, including multiphonics of E6, complete a five-note aggregation. A ritardando and a breath mark confirm the end of the aggregation. Another three-note group, including multiphonics of G4 follows as an incomplete repetition of the first aggregation. The two pitch groups in the first measure are well balanced by the presence of a dotted quarter multiphonic in each group. The second measure repeats the five-note aggregation introduced in the first measure with a subtle change. Not multiphonics but a regular dotted quarter note is used in the second measure as a means of variation of note type.

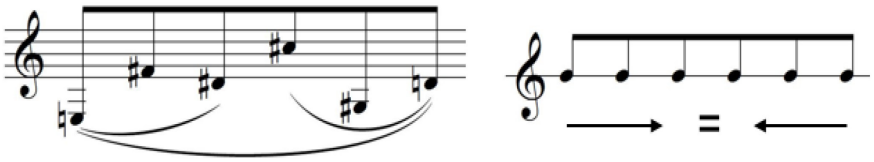


Example 2-10. Cell 3 of *cahier* E *Original*

e. Rhythmic palindrome

In some cases, the rhythmic value of a measure, or an entire cell, reads the same backwards as forwards. Messiaen, who used rhythmic palindromes in his music, is a possible influence on Boulez in this regard. In *Domaines*, some measures have only one note in them, such as the first measure in cell 1 of *cahier* C and cell 3 of the same *cahier*. It is trivial to mention all the one-note measures or cells as examples of rhythmic palindrome, although that is technically correct.

Except for the one-note examples, the simplest way to construct a rhythmic palindrome is to fill a measure with only one kind of rhythmic value without rests: for example, six consecutive eighth notes in a measure, as shown in Ex. 2-11. The four sixteenth notes in cell 4 of *cahier* E and two sixteenth-note triplets in cell 6 of *cahier* C are other examples of only one type of note throughout each cell.

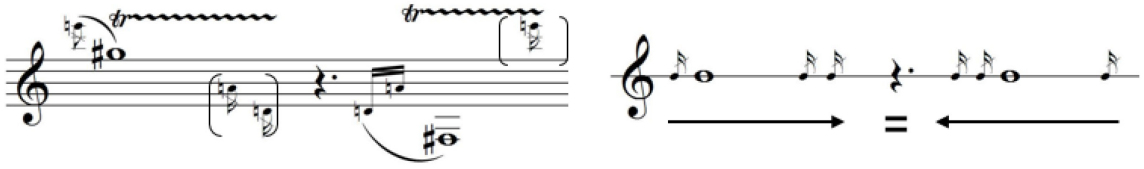


Example 2-11. Cell 2 of *cahier* A *Original*

An example of palindrome using compound rhythm can be found in cell 3 of *cahier* D. As shown in Ex. 2-12, when the optional grace notes are disregarded, both the conventional way of reading and the backward reading yield the same result: sixteenth–dotted quarter–sixteenth.

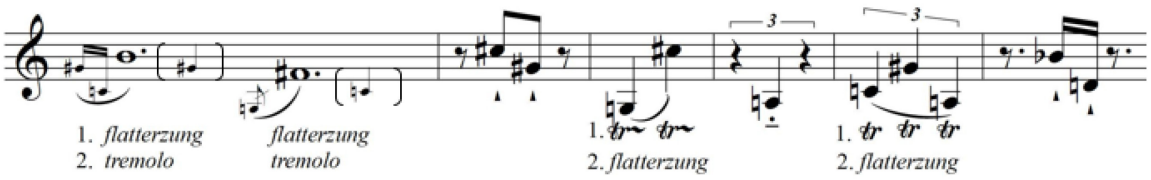
Example 2-12. Cell 3 of *cahier* D *Original* (optional grace notes omitted)

Cell 1 of *cahier* E *Original*, shown in Ex. 2-13, is another example of palindrome using compound rhythm. In this case, unlike Ex. 2-12, the optional grace notes can be counted to make the rhythmic palindrome. Alternatively, if none of the grace notes are counted as part of the palindrome, the two whole notes and dotted quarter rest in the middle make a palindrome anyway. It is also worth noting the inclusion of a dotted-quarter rest as part of the palindrome. The composer carefully used different length of rests to make a rhythmic palindrome in some passages such as cell 4 of *Cahier* B Original.



Example 2-13. Cell 1 of *cahier* E *Original*

The three examples of rhythmic palindrome mentioned so far are all one-measure cells. Boulez also used various types of rhythmic palindrome to compose multi-measure rhythmic palindromes. The first way is simple addition: adding a different type of self-palindromic bar to the next bar. Each bar makes a rhythmic palindrome separately, but no combination of different bars within the same *cahier* makes a rhythmic palindrome. For example, cell 6 of *cahier* B *Original* has two measures. Quintuplet sixteenth notes are used in the first measure, whereas sixteenth-note triplets comprise the second measure. Each measure makes a rhythmic palindrome by using only one kind of note length without a rest. A similar, but more elaborate, example can be found in cell 3 of *cahier* B *Original*, as shown in Ex. 2-14. It is six bars long, and each bar make a rhythmic palindrome as in the previous example, but the addition of different kinds of rest creates a rich rhythmic vocabulary.

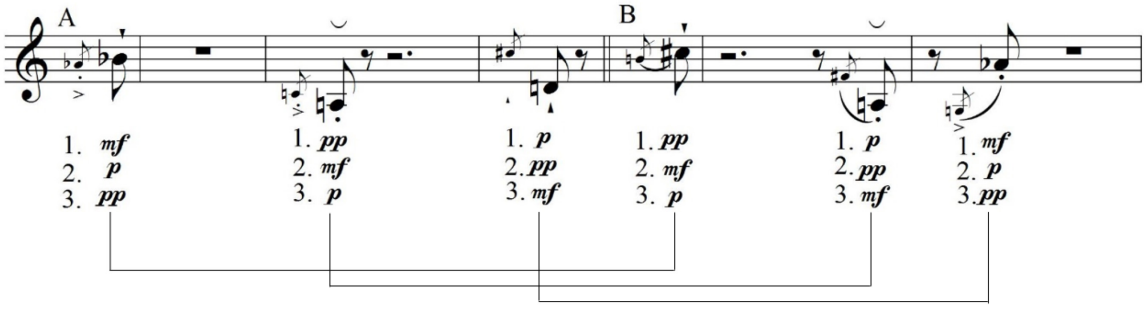


Example 2-14. Cell 3 of *cahier* B *Original*

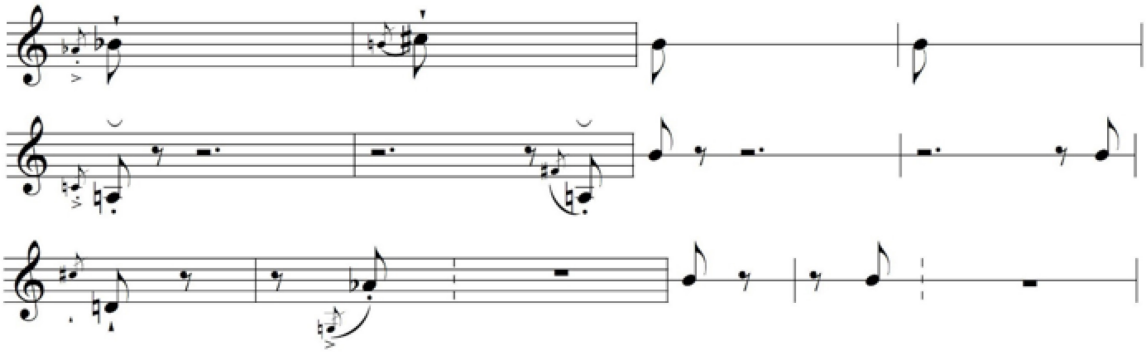
Pairing is the second way of making a rhythmic palindrome that Boulez used. It requires more abstract thought than addition, because it is necessary to find a pair of distant measures. Cell 1 of *cahier* B *Original* is an example of the pairing. The written instruction on how to play this cell explains the priority of rhythm over pitch: "Can be repeated 3 times with dynamic differences by changing the order of the notes in A and B." Therefore, the pitches are interchangeable in this cell, whereas the rhythm is not.

Three palindromic groups can be made by combining two bars: bars 1 and 5, 3 and 6, and 4 and 7. The first two groups make clear rhythmic palindromes, but the last group needs some explanation. As shown in Ex. 2-15, there is only one note pattern scattered on the score (an eighth note with a grace note). Each eighth note is separated by various lengths of rest. The second bar only has a whole-note rest, creating an extra measure in section A (four bars in A and three bars in B). The length between the fourth and seventh bars does not match to make a rhythmic palindrome. However, if an imaginary bar line is inserted between the eighth note and the whole-note rest in bar 7, as shown in Ex. 2-16, these two bars can make a rhythmic palindrome. The leftover whole-note rest in bar 7 can make another pair of rhythmic palindromes with the whole-note rest of bar 2.

It should be mentioned that there are a few cases of notational discrepancy between the composer's manuscripts and the two published scores of 1977 and 2013.[29] Cell 1 of *cahier* B is one example. The facsimile of the manuscripts published by Universal Edition (Partitur UE 14999) has a whole-note rest in bar 7. On the other hand, the score published in 1977 and reprinted in 2013 has a half-note rest in the same place instead. I believe that this half-note rest in the scores is a typographical error. Even though a whole-note rest seems to be correct, we still cannot claim that Boulez missed putting a bar line in bar 7, but it probably worth adding an imaginary bar line because that makes a nice balance between sections A and B in creating groups with rhythmic palindromes.



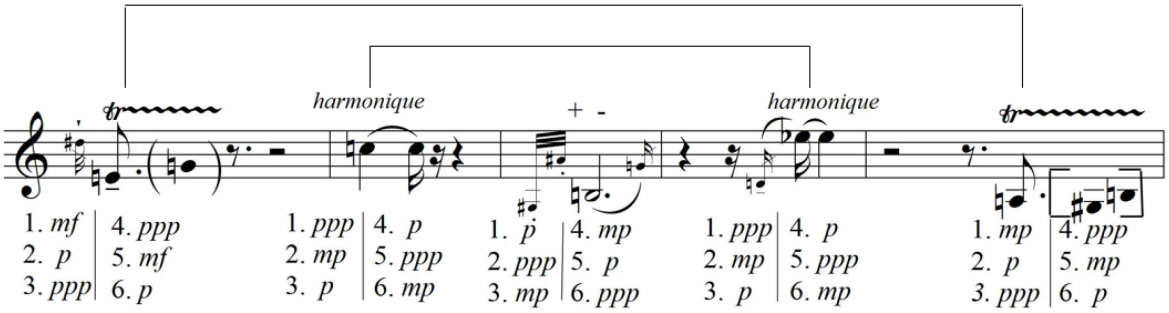
Example 2-15. Cell 1 of *cahier* B *Original*



Example 2-15. Three pairs of rhythmic palindromes from cell 1 of *cahier* B *Original*: bars 1 and 5 (top), bars 3 and 6 (middle), and bars 4 and 7 (bottom)

[29] Further examples of notational discrepancy between the composer's manuscripts and the published scores will be discussed later on in the Performance Issues section (iii. Suggestions for multiphonics).

The last way Boulez employs to make a rhythmic palindrome is a through-written one. In this case, a rhythmic palindrome can be found throughout the cell. In other words, the first and last bars create a rhythmic palindrome; the second and second-to-last bars create another one; and so on. A good example is cell 4 of *cahier* B *Original*, as shown in Ex. 2-17. The rhythm of the entire cell can be read the same backwards as forwards in this type of example, but the grace notes need to be disregarded in Ex. 2-17.



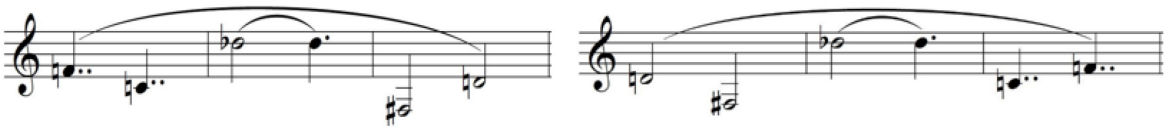
Example 2-17. Cell 4 of *cahier* B *Original*

Boulez placed pairs of different ornamentations to emphasize the palindromic structure in cell 4 of *cahier* B *Original*: a pair of trills in the first and last bars, and a pair of multiphonics in the second and fourth bars.

iv. Retrograde relationship between *Original* and *Miroir*

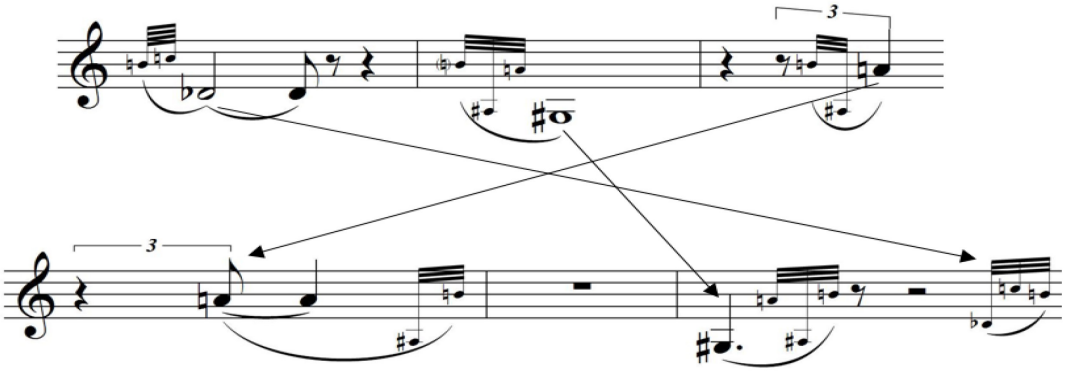
It is clear that each cell of the *Miroir* section makes various types of retrograde with the corresponding cell in the *Original*. Basically, every cell of the *Original* is retrograded in *Miroir*, although the retrograde patterns are quite different, as we will see. Again, all numbering of the cells are given in the horizontal way for convenience of reading.

a. Exact Pitch and Rhythm Retrograde: All of the pitches and rhythms of the *Original* are retrograded exactly in the corresponding *Miroir*. For example, the pitch and rhythm of cell 2 of *cahier* B *Original* are retrograded exactly in the corresponding cell 4 of *cahier* B *Miroir*, as shown in Ex. 2-18.



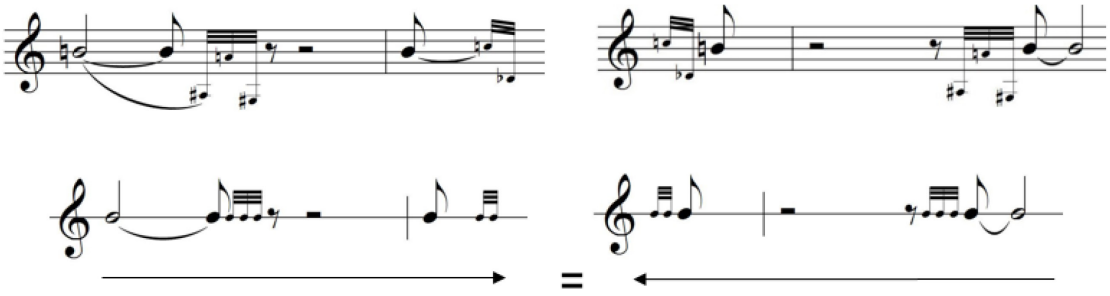
Example 2-18. Cell 2 of *cahier* B *Original* (left) and cell 4 of *cahier* B *Miroir* (right)

b. Exact Pitch Retrograde: The pitch contents of the *Original* are retrograded exactly in the corresponding *Miroir*, but the rhythm changes. For example, the order of pitches including grace notes in cell 5 of *cahier* A *Original* is retrograded exactly in the *Miroir*, but the rhythm changes in the corresponding cell 4 of *cahier* A *Miroir*, as shown in Ex. 2-19. A triplet quarter note A in bar 3 of the *Original* becomes a quarter note tied to a triplet eighth note in bar 1 of the corresponding *Miroir*, whereas a whole-note G# in bar 2 of the *Original* becomes a dotted quarter note in bar 3 of the *Miroir*, and Db, a half note tied to an eighth note in bar 1 of the *Original*, becomes a grace note in bar 3 of the *Miroir*.



Example 2-19. Cell 5 of *cahier* C *Original* (top) and cell 4 of *cahier* C *Miroir* (bottom)

c. Exact Rhythm Retrograde: The rhythm of the *Original* is retrograded exactly in the corresponding *Miroir*, but the pitch is not. For example, the rhythm of cell 2 in *cahier* C *Original* is retrograded exactly in cell 1 of *cahier* C *Miroir*, but the retrograded pitch order is slightly altered in the *Miroir*, as shown in Ex. 2-20. (The last three notes of *Original* [B, C, Db] would be notated as [Db, C, B] if it were retrograded properly; however, the order of written pitches is C, Db, B at the beginning of *Miroir*.)

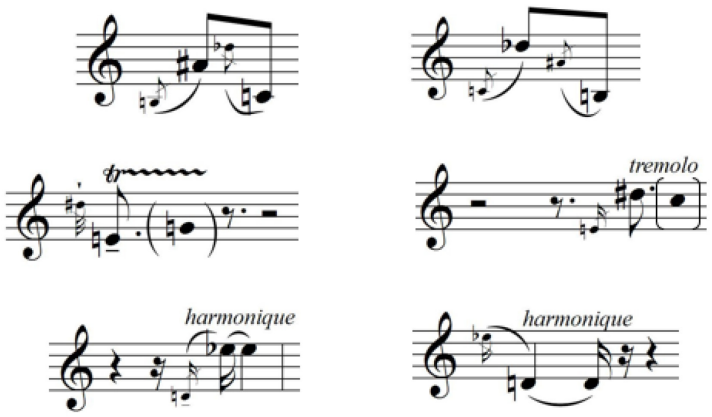


Example 2-20. Cell 2 of *cahier* C *Original* (top left), cell 1 of *cahier* C *Miroir* (top right), and a rhythmic comparison of the two (bottom)

d. Pitch Unit Retrograde: The order of individual pitches is not retrograded exactly, but as a few fragments of units (the rhythmic value of the notes is retrograded exactly sometimes but sometimes not). For example, a pitch-class set (123456789) can be divided into three groups, A (123), B (456), and C (789). Then only the order of three groups is retrograded whereas the order of pitches in each group is unchanged, resulting in CBA (789456123). An example of this kind of retrograde can be found in cell 1 of *cahier B Original* and its corresponding cell 5 of *cahier B Miroir*. Pitches in the *Original* are divided into six dyads (ABCDEF) and those dyads are retrograded in the corresponding *Miroir* (FEDCBA) whereas the pitch order within each dyad does not change. Another example is cell 6 of *cahier* C *Original* and cell 3 of *cahier* C *Miroir*, where the sixteenth-note triplets are treated as a unit as shown in Ex. 2-21.

Example 2-21. Cell 6 of *cahier* C *Original* (left) and cell 3 of *cahier* C *Miroir* (right)

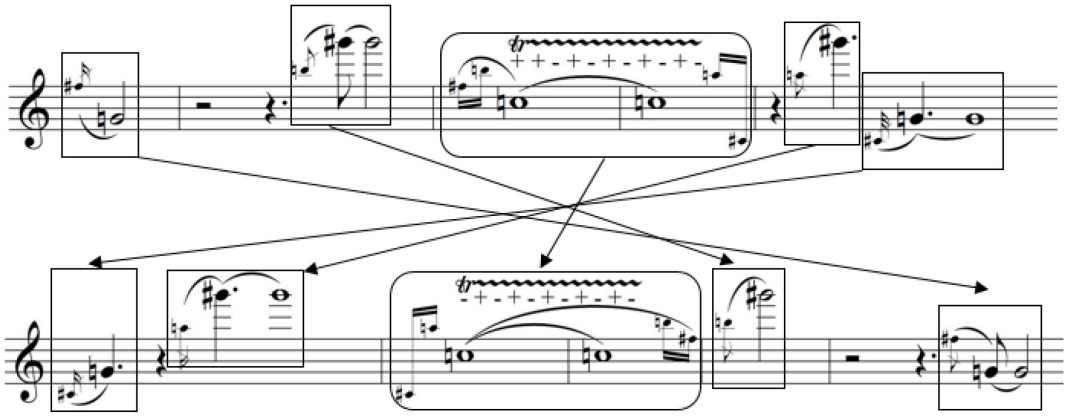
e. Swap Retrograde: A grace note and a following non-grace note swap their note types in the corresponding *Miroir*. As shown in Ex. 2-22, the grace notes B3 and Db5 in *Original* become eighth notes in the corresponding *Miroir*, while the eighth notes A#4 and C4 in *Original* become grace notes in *Miroir*. This kind of swapping can be found in numerous places throughout the score. Another example is bars 1 and 4 of cell 4 in *cahier* B *Original*.



Example 2-22. Cell 3 of *cahier* A *Original* (top left) and cell 2 of *cahier* A *Miroir* (top right); bar 1 of cell 4 of *cahier* B *Original* (middle left) and bar 5 of cell 2 of *cahier* B *Miroir* (middle right); bar 4 of cell 4 of *cahier* B *Original* (bottom left) and bar 2 of cell 2 of *cahier* B *Miroir* (bottom right)

f. A mixture of the above-mentioned patterns: Some cells are constructed with a mixture of the different retrograde patterns we have discussed. For example, cell 4 of *cahier* D *Original* is a mixture of three different retrograde patterns, as shown in Ex. 2-23. The four dyads in bars 1, 2, and 5 of *Original* are retrograded as pitch units in bars 1, 4, and 5 of *Miroir* (Pitch Unit

Retrograde). Although the order of pitch units is retrograded exactly, the rhythm is changed in *Miroir* (Exact Pitch Retrograde). In contrast, both pitch and rhythm in bars 3 and 4 of *Original* are retrograded exactly in bars 2 and 3 of *Miroir* (Exact Pitch and Rhythm Retrograde).



Example 2-23. Cell 4 of *cahier* D *Original* (top) and cell 3 of *cahier* D *Miroir* (bottom)

Almost all the pitch content of *Original* is retrograded without change in the corresponding *Miroir*. Sometimes the order of retrograded pitches in *Miroir* strictly follows the order of *Original*; in other cases, it is more freely treated while maintaining the pitch contents of *Original*. However, there are some exceptions that include altered and omitted pitch materials in *Miroir*. For example, A at the end of bar 3 in cell 5 of *cahier* B *Original* is altered to A# in the corresponding cell 1 of *cahier* B *Miroir*. It is not certain that this case is the composer's intentional pitch change or just a mistake of the composer, because this kind of variance is rare in the entire score. Ian Mitchell writes: "Occasionally, as in *Cahier* C *Miroir* cell 5, not all of the notes are included."[30] However, it is impossible to find that omitted note during examination of all the cells between the *Original* and the *Miroir* of *cahier* C in either the clarinet score published in 1977 or the facsimile of the composer's manuscript published in 2016. Nevertheless, the truth

[30] Ian Mitchell, "Toward a Beginning: Thoughts Leading to an Interpretation of *Domaines* for Solo Clarinet by Pierre Boulez," in *The Versatile Clarinet*, ed. Roger Heaton (New York: Routledge, 2006), 129.

is uncertain about the existence of the omitted pitch because of possible discrepancies between the composer's sketches and the two versions of the published scores.

2. Performance Issues

Besides Boulez's lengthy direction on how to play the clarinet solo part of *Domaines*, there are many intriguing and sometimes also confusing factors in learning the work. This chapter addresses many questions that might come up in studying the clarinet solo part.

i. Basic concepts of the composition (melody, time, meter, tempo, and rhythm)

It is fair to say that understanding of the compositional background, whether historical or analytical, is vital for studying a piece of music. This factor is even more crucial when someone embarks on a journey to learn music written in an unfamiliar language. Boulez's *Domaine* is a perfect piece to experience unfamiliarity, and yet the compositional method is straightforward enough to be easily understood. Considering that this piece was originally written to teach a composition class in Basel (the clarinet solo part was written first, and then the composer added six ensembles later because he thought the solo part alone was too simple), the solo part contains lots of new ways to show how to compose a piece without depending on traditional ways of composition. However, the level of the compositional complexity of *Domaines* is somewhat limited compared with the composer's earlier pieces. For example, the famous *Le Marteau sans maître*, written in 1955, has a dazzling complexity of multiplication procedures that is hard to understand. The simplicity of the compositional process of *Domaines* was probably Boulez's intentional choice to teach young students effectively how to compose serial music. The clarinet solo part contains all the important fundamentals of the composition, revealing Boulez's

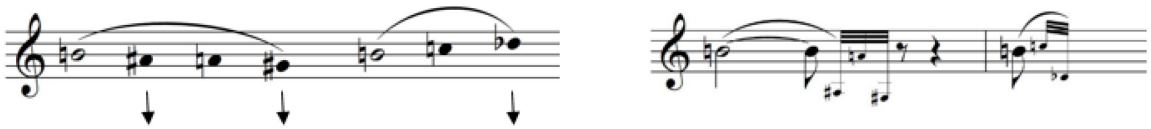
compositional ideas without the disguising procedures of *Le Marteau*. This is why the solo part can be performed alone; the ensemble parts are extensions of what the solo part established.

Because Boulez rigorously defied compositional traditions, it seems acceptable to put the word "anti" in front of some elements that we will now discuss to describe the compositional character that Boulez wanted to achieve.

a. Melody (anti-melody)

The reason why *Domaines* is challenging for the player, and also for the listener, is that it is hard to find a single memorable melody line throughout the solo part. All the melody lines are fragmented, and almost all cells except for some in *cahier* F are constructed with a limited numbers of pitches which, in most cases, are part of the chromatic scale. Furthermore, the movement between two adjacent pitch classes is concealed by using a substitutional interval. For example, when C and C# are deployed, Boulez prefers a major seventh interval instead of a semitone to eliminate the trace of melody.

Simple steps can be made to understand the composition process of the melody of *Domaines*. First, choose a series of pitches which is either chromatically or diatonically continuous. Second, put selected pitches in stepwise order, or mixed order. Third, invert close intervals such as a semitone or a whole tone into a major seventh or a minor seventh, or move one pitch to a distant register from another to avoid making a recognizable melodic line. Fourth, put enough time between groups of pitches by using long notes and rests to make it harder to recognize the whole pitch movement as a single melody line. Ex. 2-3 is used again below in reverse order as Ex. 2-24 to show how Boulez changed two short and simple chromatic lines into jagged and almost hysterical fragments.



Example 2-24. Chromatic pitch-class series (left) and its application in cell 2 of *cahier* C *Original* (right)

Another aspect to keep in mind about the melody is that there are almost limitless ways to make a distinctive melody line, if it can still be called a melody. The solo player freely selects the order of *cahiers* A–F. There are two ways of reading, a horizontal and a vertical way, to play each *cahier*. These two variable factors yield 1,036,800 ways to organize the order of the cells. The point is that there is no priority among different cells. The traditional concept of a linear progression in the literature (introduction–development–climax–resolution) may not be necessary to decide melodic order. As Boulez wrote in 1954, he tried to think of musical development as not a closed circuit, but a domain in which one can choose one's own direction, as the case of Mallarmé's *Un Coup de dés*.[31] Performing *Domaines* is like walking through the various gardens, as Boulez implied. Each garden has different figuration and different contents inside, but they have no priority. Each garden stands on its own character and its own beauty. A performer simply chooses a path to walk through all the gardens.

b. Time and meter

Note that there is no time signature on the score. A time signature is a notational convention to specify how many beats are to be contained in each bar and which note value is to be given one beat. In *Domaines*, unfortunately for the player, there is no fixed beat pattern. The meter changes almost every bar. When the meter is unchanged for a few consecutive bars, the rhythmic pattern is changed each bar.

[31] Pierre Boulez, "Recherches maintenant," *La Nouvelle revue française* 23 (November 1954): 898–903.

c. Tempo

Each cell of *cahiers* A–E has a different tempo marking from among *Très Lent*, *Lent*, *Très Modéré*, *Modéré*, *Vif*, and *Assez Vif*. Basically, there are three levels of tempo marking (*Lent*, *Modéré*, and *Vif*) and intensifiers for each one (*Très*, *Assez*). Some cells in *cahier* F have longer tempo markings than other *cahiers*, such as *De Modéré à Vif* or *D'assez lent à Très Modéré*, which add in-between ground to the basic temporal slow–moderate–fast is used in all the other *Cahiers*. Some cells have two tempo indications; cell 1 of *cahier* A, for instance, has both *Très Lent* and *Lent*. In this case, the player can choose one of the written tempos to play the cell.

d. Rhythm

There is a good story from Pamela Weston's book *Clarinet Virtuosi of Today* about the premiere of *Domaines*.[32] Walter Boeykens was the chosen soloist for the premiere of the piece with an ensemble. He played the rhythm of *Domaines* rather freely at the first rehearsal with Boulez, who immediately pointed out the clarinetist's inaccurate rhythm. Boeykens obviously thought it would be fine to have some freedom to interpret the piece. However, Boulez expected him to follow every detail of the score, especially the rhythm, as written. Then Boeykens had to ask Boulez to give him three days to practice to make all the rhythm correct.

Even though it must be hard for the audience to recognize such ideas as rhythmic palindrome and rhythm pairing while listening to *Domaines*, Boulez clearly wanted to convey his compositional principles to the players and audience without compromise. Although some musical parameters such as tempo, dynamic, pitch, and ornamentation, are all changeable within certain boundaries, the rhythm is not. And that it shows the importance of the rhythm of *Domaines*. Therefore, the rhythm should be carefully studied and played as written.

---

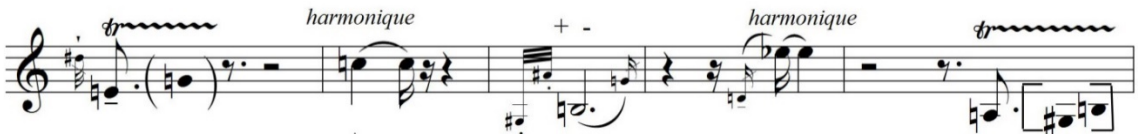
[32] Pamela Weston, *Clarinet Virtuosi of Today* (Baldock, England: Egon, 1989), 35.

ii. Optional factors and their notation

As mentioned above, there are some optional, or changeable, elements in the score that can multiply the combinational possibility of the work to an almost limitless level. These changeable elements are scattered all over the solo part and easy to find. However, Boulez used a cryptic way to notate some of the variable elements. This section looks at all kinds of optional factors used in the work, then discusses how to deal with the composer's different notations.

a. Pitch

Boulez used a rectangular bracket to indicate a group of optional notes within an obligatory passage. It is completely the soloist's choice whether to play these optional note groups or not. Please be aware that there is another type of bracket with a round shape to indicate an obligatory trill. In Ex. 2-25, the E-natural trill in the first bar should be played as a trill between E natural and G natural, an obligatory note, whereas the A-natural trill in the last bar can be played as either an A-natural/G# trill or A-natural/B trill, because G# and B are optional notes.

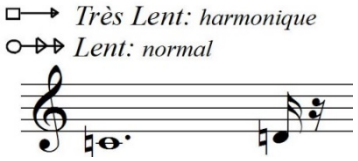


Example 2-25. Cell 4 of *cahier* B *Original*

b. Tempo

It has been mentioned that some cells have two different tempo markings. Three cells of *cahier* A have this type of multiple tempo indication, which allow the performer different ways to

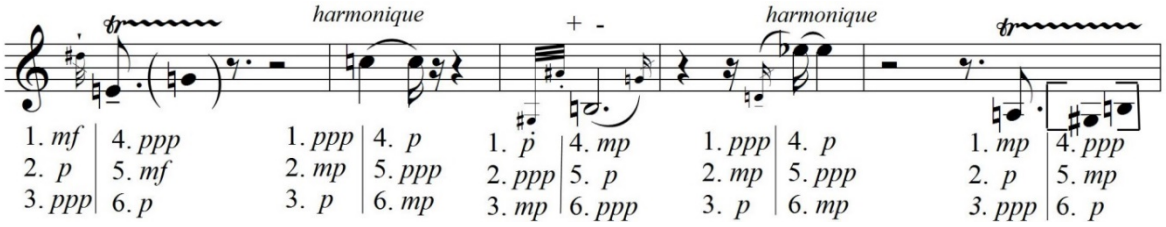
play the written notes. For example, cell 1 of *cahier* A *Original* has a *harmonique* sign for *Très Lent* and a *normal* sign for *Lent*, as shown in Ex. 2-26. If the soloist decides to play a harmonic for the long C note, the tempo should be slightly slower (*Très Lent*) than normal (*Lent*).



Example 2-26. The two tempo markings in cell 1 of *cahier* A *Original*

c. Dynamics

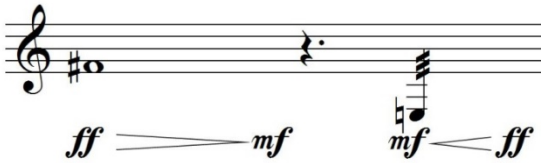
Over half of the cells (40/72) of the solo part have multiple dynamic options as shown in Ex. 2-27 (two dynamic options for 28 cells, three dynamic options for 8 cells, four dynamic options for 2 cells, and six dynamic options for 2 cells).



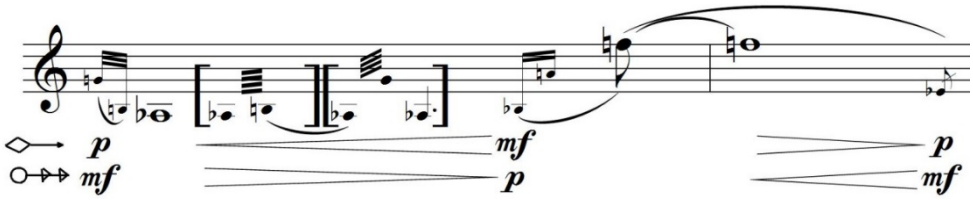
Example 2-27. Six dynamic options in cell 4 of *cahier* B *Original*

The disposition of dynamics may seem random, but there are a few principles that Boulez designed to place the different dynamics in a balanced order. The first way is palindrome, which the composer also used for the rhythmic disposition. If the score is examined carefully, it is easy to find examples of a dynamic palindrome. In cell 5 of *cahier* A *Original*, as shown in Ex. 2-28, the order of dynamics is *ff–mf–mf–ff*, which reads the same backwards as forwards. Cell 4 of

cahier A *Original* has a different dynamic palindrome of *p–mf–p* or *mf–p–mf*, as shown in Ex. 2-29.

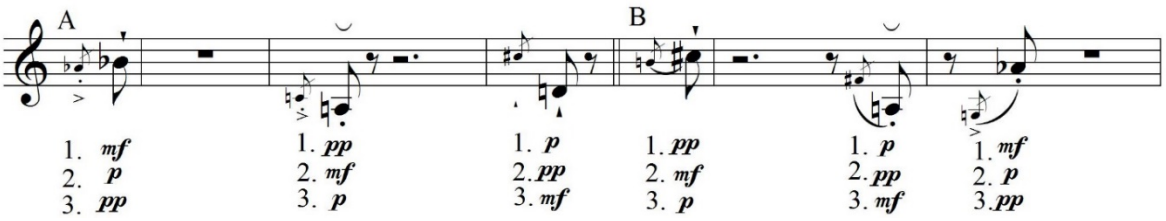


Example 2-28. One dynamic option in cell 5 of *cahier* A *Original*



Example 2-29. Two dynamic options in cell 4 of *cahier* A *Original*

The second way Boulez uses to organize different dynamics into an order is the aggregation of dynamics. A good example of this method can be found in cell 1 of *cahier* B *Original* as shown in Ex. 2-30.



Example 2-30. Cell 1 of *cahier* B *Original* from the composer's manuscript

There are two sections, A and B, divided by a double bar, and each has nine dynamic options (three dynamics for each note and three notes in each section). The reason why this cell is divided in two sections is that Boulez used two multiplied products of β_1 and β_3 for each section (Losada, 2017). Another explanation is that each section contains complete 3x3 dynamic aggregations. If the dynamics are separately examined, as shown in Fig. 2-7, it is clear that each

line and each column of dynamics is made up of the same three dynamics of *pp–p–mf*. As Boulez instructed in the score, the soloist can repeat the cell three times with dynamic differences (as instructed in three dynamic lines), changing the order of notes in A and B. Thus, if a soloist chooses to repeat the cell three times, the main focus should not be the order of pitches, but the dynamics. Because the order of dynamics does not change with repeats, therefore it has more structural importance than pitches.

Numerous discrepancies exist between the published version (Universal Edition, 1977) and the composer's manuscript, as well explained in Mitchell's article.[33] He points out that alternative dynamics on the second pair of notes (C and A) in cell 1 of *cahier* B *Original* are in the wrong order. The published version in 1977 and reprinted version in 2013 both have dynamic markings of 1. *p,* 2. *p,* 3. *pp* in the second line of the A section and 1. *pp,* 2. *mf,* 3. *mf* in the third line of that section. However, the composer's manuscript has 1. *p,* 2. *mf,* 3. *pp* in the second line of section A and 1. *pp,* 2. *p,* 3. *mf* in the third line of that section. In this case, as Mitchell observes, the composer's manuscript is correct, because that order can make dynamic aggregations in the overall dynamic context. It is unfortunate that this dynamic error in the published scores has not been corrected yet. When the publishers reprinted the score, they corrected lots of errors in the 1977 version of the score. However, they have not changed the dynamic order mentioned above. Example 2-30 and Fig. 2-7 used the dynamic order found in the composer's manuscript, which is correct.

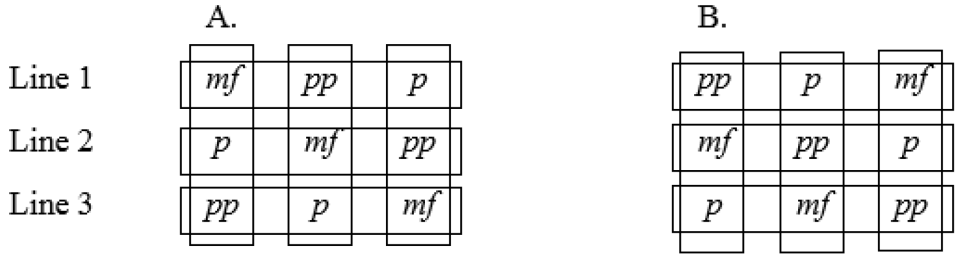
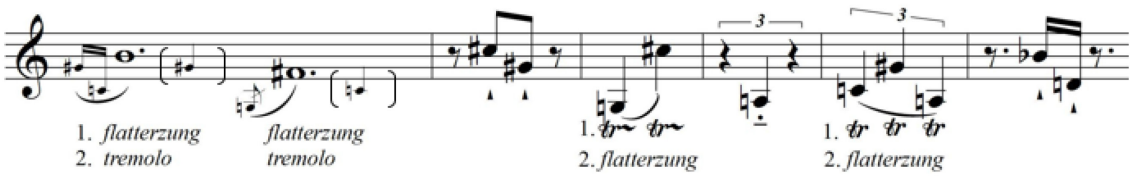


Figure 2-7. Dynamic aggregations of cell 1 of *cahier* B *Original* from the composer's manuscript

[33] Mitchell, "Toward a Beginning," 129–32.

d. Altered pitches

Boulez used a rich palette of altering pitches through multiphonics, flutter tongue, varying fingering, tremolo, and grace notes. Some cells have multiple options, as shown in Ex. 2-31, to change the way of projecting the indicated notes. Soloists may choose one of the indicated options to alter the pitches at their will.



Example 2-31. Cell 3 of *cahier* B *Original*

e. Notational variation

Boulez used multiple ways to notate optional factors, and some notations may make the soloist wonder, "What should I do with this sign?" Figure 2-8 is a list of optional notations that the composer used: various shapes of arrows, numbers, and letters to indicate possible options that the player can choose when playing the cell in question. The arrows are the most questionable figures, since the others are probably already familiar. In his *Third Piano Sonata*, written between 1955–57 and 1963, Boulez already introduced different shapes of arrows to indicate the possibility of multiple choices in his score. In *Domaines*, three pairs of arrows are used, all in *cahier* A *Original*. The first set of arrows can be found in cell 1, indicating two tempo options, and two other sets of arrows are located in cells 2, 3, 4, and 6, indicating two dynamic options. There is no connection between the different types of notation, but each notation indicates certain optional factors within the cell. Thus, all different shapes of arrows, series of numbers, and letters could be considered variations of the different notations that represent choices within a cell.

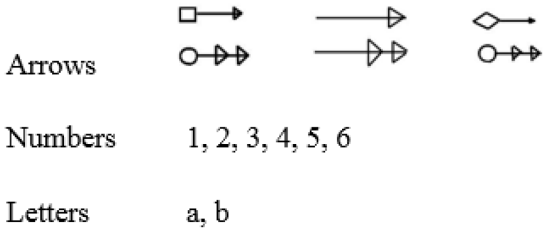


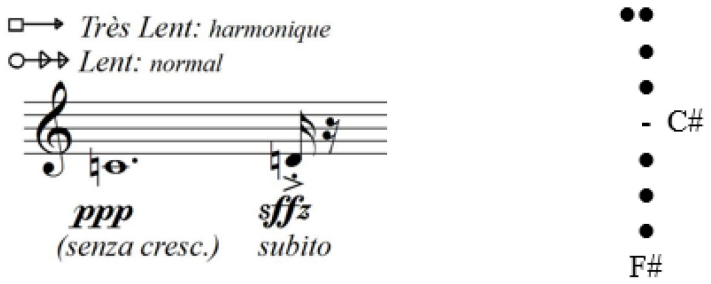
Figure 2-8. Notations of choices

iii. Suggestions for multiphonics[34]

There are seven pitches (C4, F#4, G4, C5, Db5, Eb5, E6) in *Original* that require a multiphonic, either obligatory or optional. Mitchell discusses in detail the possible multiphonic fingerings of each note and the resulting sound.[35] He also recommends using specific fingerings to execute various multiphonics successfully in the limited pitch context of each cell. The multiphonic fingerings of this chapter are partly from his ideas. However, I give some different fingerings from Mitchell's, and also provide some fingering suggestions and explanations for multiphonics in *Miroir*, which Mitchell does not cover. All fingering suggestions in this chapter should be a starting point to look for more possibilities rather than a closed end, as the harmonic possibilities of the clarinet are virtually endless.

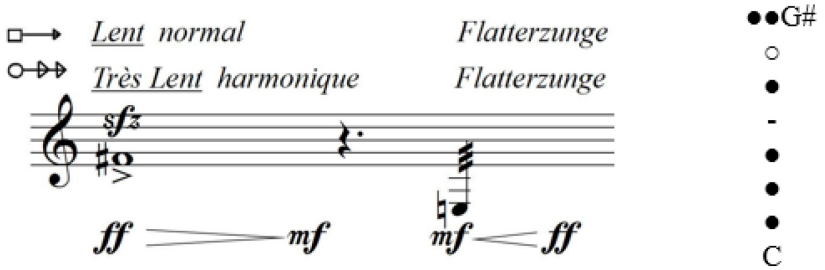
Cahier A has two multiphonics in cell 1 (C4) and cell 5 (F#4), both optional. Cell 1 is static. A dotted whole note with a dynamic of *ppp* requires an almost fragile, delicate, and static sound ended by a short, abrupt *subito sffz* D4. The fingering provided in Ex. 2-32 can make a delicate and pure dyad sound suitable for playing the long C4 multiphonic without a crescendo, as indicated in the score.

[34] All fingering suggestion in this paper is for Boehm system clarinet.
[35] Mitchell, "Toward a Beginning," 116–21.



Example 2-32. Fingering option for a C4 multiphonic in cell 1 of *cahier* A *Original*

The next multiphonic (F#4) in *cahier* A *Original* appears in cell 5. It is a tricky one to make a multiphonic on, because the dynamic marking is *ff.* Also, there is an accent and *sfz* sign on the note, which both make it harder to play a successful multiphonic. Mitchell advises avoiding playing the F#4 multiphonic in this passage because he believes it virtually impossible to achieve the composer's carefully marked dynamics. It might be a solution to avoid playing the F#4 multiphonic, but there is another F#4 multiphonic in *cahier C Original* that is an obligatory note. Example 2-33 shows a suggested fingering for the F#4 multiphonic. It does not produce a pleasant, pure multiphonic like the previous fingering for C4 multiphonics, but it can produce a brutal and grotesque metallic sound suitable to carry the composer's dynamic indication. It is also easy to control to express the *diminuendo* indicated in the passage.

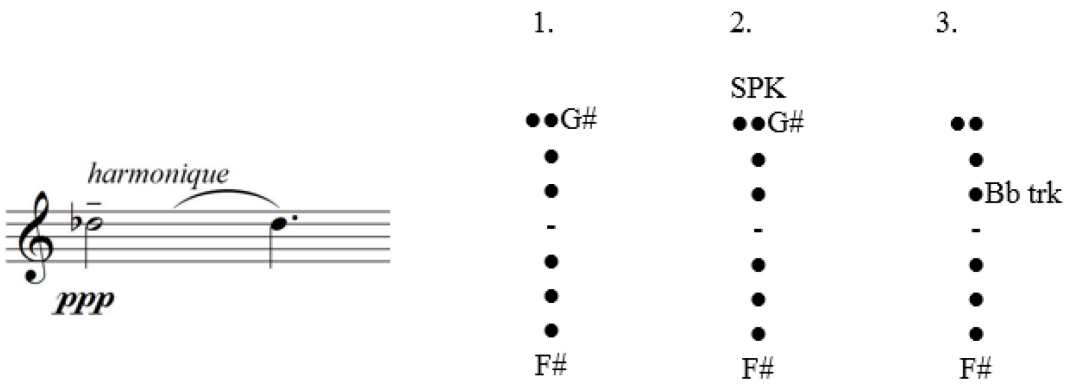


Example 2-33. Fingering option for a F#4 multiphonic in cell 5 of *cahier* A *Original*

In *Cahier* B, there are three other multiphonics (Db5 in cell 2; C5 and Eb5 in cell 4), which are all obligatory. It might be controversial to say that the multiphonic sign in cell 2 is on Db5, because the scores do not seem to show it that way. Both versions of the scores, published in 1977 and reprinted in 2013, have the multiphonic sign at the beginning of cell 2 of *cahier* B *Original*, suggesting playing all five pitches in the cell as multiphonics. The position of the multiphonic sign in the published scores is probably wrong. Since the corresponding *Miroir* clearly has a multiphonic sign on the note Db5 in the middle of the passage, and it is not effective at all to play multiphonics alongside optional grace notes, it seems the right place for the multiphonic sign can only be for Db5 in cell 2 of *cahier* B *Original*. Although the placement of multiphonic signs is consistent among the two published scores and the composer's manuscript, it is likely to have been the composer's notational error. The multiphonic sign should therefore be placed on Db5.[36]

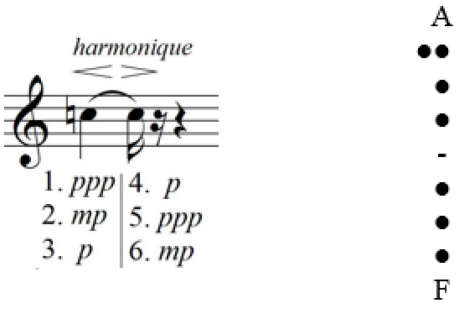
Let us look at the Db5 multiphonic first, as shown in Ex. 2-34. It is located in the center of the cell, making a good contrast with the moving lines of optional grace notes in bars 1 and 3.There are three fingering options for the Db5 multiphonic, but the most suitable fingering for the passage is the third one using a Bb side-trill key. Since the cell is constructed with only five pitches, it would be a natural choice to select the multiphonic that can produce pitches within the pitch series of the cell. The trill-key fingering gives a veiled, but clear dyad of F4 and Db5, both pitch members of the cell. The other two fingerings can also produce satisfactory sound results, but the multiphonic pitches do not fit into the overall pitch collection of the cell.

[36] It is evident that not only Boulez but also the publishers made several mistakes in *Domaines*. Some of these mistakes are mentioned above in the Compositional Analysis section (subsection iii, Pitch and rhythm of *Domaines*, part e, "Rhythmic palindrome") and in the Performance Issues section (subsection ii, Optional factors and their notation, part c, "Dynamics").



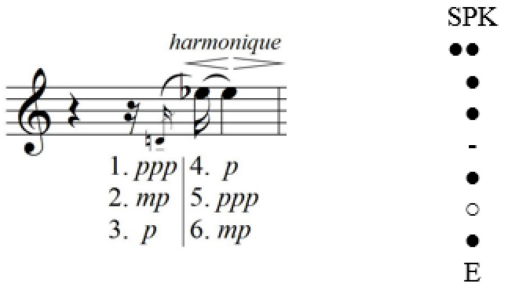
Example 2-34. Fingering options for the Db5 multiphonic in cell 2 of *cahier* B *Original*

The two multiphonics in cell 4 of *cahier* B *Original* are located in bars 2 and 4, making a rhythmic palindrome together. Moreover, the order of optional dynamics for bars 2 and 4 are identical, as will be explained in detail later. Two circumstances mentioned so far indicate that bars 1 and 4 are related somehow. Thus, it would be a fair judgment to match the style of multiphonics between the two bars. Both multiphonics require producing a dynamic range from *ppp* to *mp* to accommodate the optional dynamics with crescendo and diminuendo signs. In the overall context of the whole cell, it would be a reasonable choice to play pure dyad multiphonics to match the veiled and somewhat distant sound of the other bars.



Example 2-35. Fingering option for C5 multiphonic in cell 4 of *cahier* B *Original*

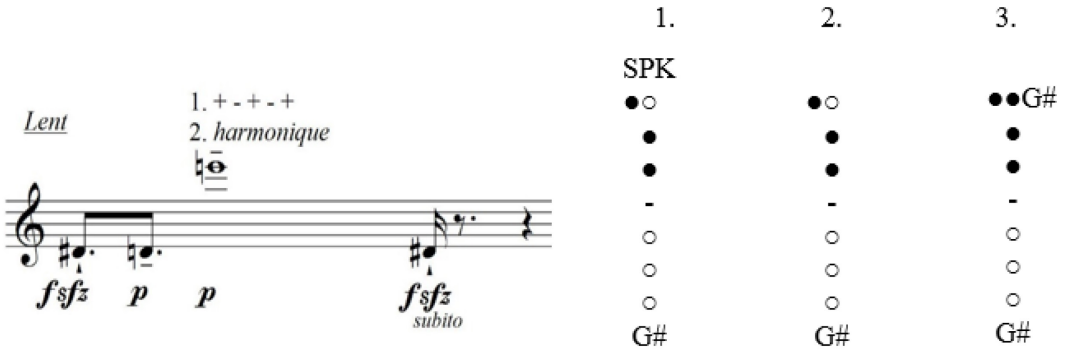
Example 2-35 gives a suggested fingering for the C5 multiphonic in bar 2 of *cahier* B *Original*. Example 2-36 below suggests a possible fingering option for the Eb5 multiphonic in bar 4 of the same *cahier*. Both fingerings are suitable for producing a delicate dyad sound.



Example 2-36. Fingering option for Eb4 multiphonic in cell 4 of *cahier* B *Original*

In *cahier* C, there are two multiphonics: obligatory on Gb4 and optional on E6. Since Gb4 is the enharmonic note of F#4, the fingering shown in Ex. 2-33 is good enough to produce a Gb4 multiphonic with the crescendo from *mf* to *ff* indicated under the note.

The other multiphonic sign in *cahier* C is on altissimo E6 in cell 3. The fingering options for an E6 multiphonic are simple enough to remember, because they are variations of the regular fingering for an altissimo E6. The main obstacle to producing an E6 multiphonic with the regular fingering is that the soloist needs to embrace the undertone while maintaining the high altissimo register note, a double sound that is generally prohibited. Nonetheless, Boulez asked for a multiphonic on E6, which is a possible but not easy task, because most advanced clarinet players have already become used to producing a single altissimo note without undertone. It requires a delicate control of two registers to produce a successful E6 multiphonic. Example 2-37 shows three different fingering options. The second fingering produces E4 and E6, which fit perfectly into the overall pitch context of the cell, while the first and third fingerings produce F4 and G#4 with E6, respectively.

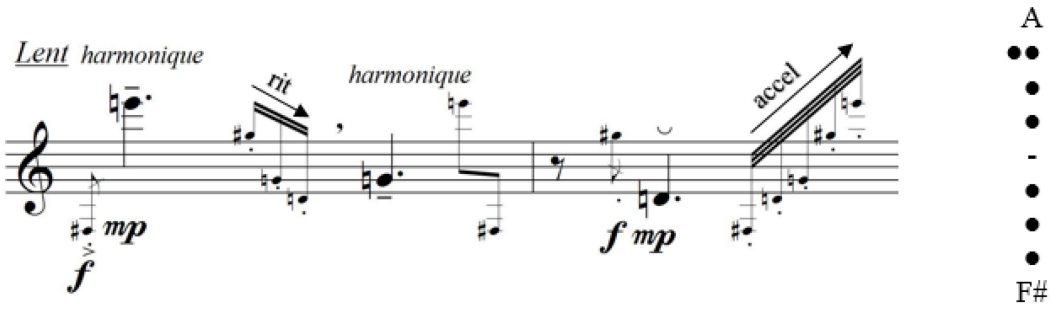


Example 2-37. Fingering options for E6 multiphonic in cell 3 of *cahier* C *Original*

Several notational discrepancies between the composer's manuscript and published score of 1977 have already been mentioned. Cell 4 of *cahier* C *Original* is another example. The difference is the placement of the cell in the score, not the musical context in the cell. In the composer's manuscript, the cell is located in the top left side of the page as cell 3, whereas the cell is printed in the top right side of the page as cell 3 in the 1977 score. It seems that the publishers wrongly placed the cell, because there was no logical reason to reverse the order that Boulez given in his manuscript. Fortunately, the publishers corrected this error when they reprinted the score in 2013. This document has therefore labeled the cell as cell 3, as shown above in Ex. 2-37.

Cahier E *Original* has two obligatory multiphonics in cell 3. The first one is a high E6 multiphonic, fingerings for which have already been given in Ex. 2-37. However, it would be worth considering another fingering in this passage, because the overall pitch context is different. As shown in Ex. 2-38, only five pitch classes, D, E, F#, G, and G#, are used in the cell. The multiphonic outcome of the second fingering, producing E4 and E6, and the third fingering, producing G#4 and E6, in Ex. 2-37 both fit well into the context.

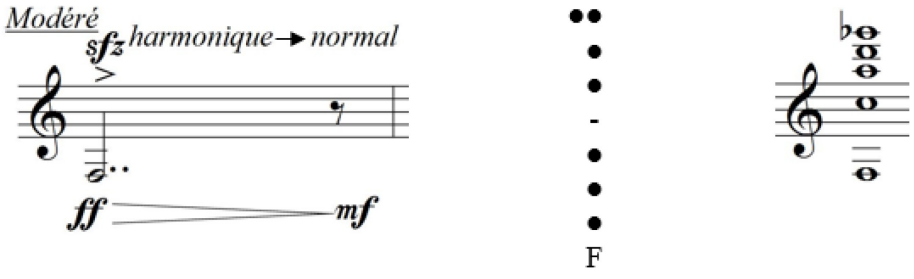
The second multiphonic is located on G4, in the same bar as the previous multiphonics. It is possible to use the fingering shown in Ex. 2-35 to play the G4 multiphonic, since it produces a dyad of G4 and C5. However, the problem is that the pitch class C does not belong to the overall pitch context of the cell. Mitchell suggests two other fingerings to solve the problem, but they are not well suited to the pitch context. An alternative fingering suggestion for the G4 multiphonic is shown in Ex. 2-38. It produces G4 and E6, which both belong to the overall pitch context. The wide gap between G4 and E6 is also suitable for the wide leaping character of the cell. Another benefit of the suggested fingering is that it can anticipate the following grace note of E6. If the third fingering option in Ex. 2-37 is applied to the first E6 multiphonic, which makes G#4 and E6, the anticipation of the following pitch can be emphasized.



Example 2-38. Fingering option for G4 multiphonic in cell 3 of *cahier* E *Original*

Almost all the multiphonics used in *Miroir* are identical with the multiphonics of *Original*, with a couple of exceptions. The first example can be found in cell 2 of *cahier* B *Miroir*. In bar 2, the multiphonic sign is on D4, whereas the multiphonic sign is on Eb5 in the corresponding *Original*. Even though the multiphonic signs are located on different notes, both multiphonics can be played with the same fingering, because the fingering shown in Ex. 2-36 produces D4 and Eb5 together. Whether the multiphonic sign is on D4 or Eb5, the pitch outcome will be same as long as the indicated fingering applies.

The second example of harmonic discrepancy can be found in cell 2 of *cahier* C *Miroir*. In *Original*, the harmonic sign is on Gb4. In *Miroir*, on the other hand, the harmonic sign is on F3, as shown in Ex. 2-39. This is a problematic change, because it is hard to produce an F3 multiphonic with the indicated dynamic signs. The fingering for the F3 multiphonic is the same as a traditional F3 fingering. As Bruno Bartolozzi mentions in his book, all clarinet fingerings are polyvalent, meaning that all fingerings are suitable for passing from single sounds to chords.[37] It is basic, and yet crucial, to control the embouchure and air pressure to produce a successful F3 multiphonic. Actually, this principle should be applied to all the multiphonics mentioned above to get a satisfactory result. However, the F3 multiphonic clearly shows the necessity of controlling the embouchure and air pressure, because there are no other easy fingerings to produce this multiphonic. Keep in mind a general acoustic phenomenon of the clarinet harmonics that, even though numerous overtones can be simultaneously produced with any traditional fingering, the fundamental sound diminishes as more high overtones begin to emerge. It might therefore be practical, especially in the case of the F3 multiphonic, to focus on producing the closest overtone, C5, which is a twelfth apart from the fundamental F3, to produce an audible low F3 sound at the same time.



Example 2-39. Bar 1 of cell 2 of *cahier* C *Miroir* (left), the traditional F3 fingering for an F3 multiphonic (middle), and possible overtones produced by the traditional F3 fingering (right)

[37] Bruno Bartolozzi. *New Sounds for Woodwind*, trans. and ed. Reginald Smith Brindle (London: Oxford University Press, 1967), 37.

Table 2-3. Suggested multiphonic fingerings of *Domaines*

●● ● ● - C# ● ● ● F# C4	1. ●●G# ● ● - ● ● ● F#	2. SPK ●●G# ● ● - ● ● ● F#	3. ●● ● ●Bb trk - ● ● ● F# Dd5	●●G# ○ ● - ● ● ● C F#4	A ●● ● ● - ● ● ● F C5
SPK ●● ● - ● ○ ● E Eb4	1. SPK ●○ ● - ○ ○ ○ G#	2. ●○ ● - ○ ○ ○ G#	3. ●●G# ● - ○ ○ ○ G# E6	A ●● ● ● - ● ● ● F# G4	●● ● ● - ● ● ● F F3

iv. Questionable issues

There are somewhat cryptic aspects of both the composer's manuscript and the published scores. Boulez left several versions of work-in-progress sketches of *Domaines*, and while working on the work, he himself made several notational slips, which can be confirmed by comparing different versions of the manuscript. The publishers also made several printing errors when the score was published first in 1977. Most of the errors had been corrected when the

publishers reprinted the score in 2013, but some issues remain to be considered, and possibly corrected.

An example of a possible compositional mistake can be found in bar 1 of cell 4 of *cahier* B *Original*. Boulez clearly marked a diamond-shaped note head for E4 in *Original*, whereas he used a dotted eighth note in the corresponding *Miroir*. It is uncertain whether he wanted a specific sound effect for the E4 only in *Original*, but it seems the publishers considered the diamond-shaped note E4 as the composer's notaitional error. In both published scores, a dotted eighth note is used in *Original* instead of the diamond-shaped note that Boulez used to match the corresponding note in *Miroir*.

Another possible mistake from the composer, also found in both published scores, is optional dynamics in cell 4 of *cahier* B *Original*. Let us first look at some general characteristics of the dynamics in this cell. There are six dynamic options to play each bar, but the actual dynamic options for each bar are three. Boulez divided the six dynamic options into two parts, the second of which is a replicate with dispositional variation of the first part. The replicate pattern of dynamics is consistent throughout all five dynamic groups, as shown in Fig. 2-9.

Figure 2-9. Replicate pattern of dynamics in the first measure (left) and second measure (right) of cell 4 of *cahier* B *Original*

As mentioned above, the rhythm of the entire cell forms a rhythmic palindrome. Moreover, the indicated playing technique in each bar can also be understood as a palindrome. Then should the dynamic groups make another palindrome to match other palindromic characteristics of the cell? The composer's manuscripts and published scores have a consistent

dynamic disposition that does not make a dynamic palindrome. However, this situation needs to be carefully examined.

Figure 2-10 shows the entire dynamic group in cell 4 of *cahier* B *Original*. Almost all the dynamics make a dynamic palindrome, except for two *mf* in the first column. Is it, then, possible to consider that the two *mf* markings were Boulez's mistake? There are three reasons to support this speculation. First, *mf* is used only in the first dynamic column, whereas all other columns are made with only the three dynamics of *mp*, *p*, and *ppp*. If *mp* is used instead of *mf* in the first column, all six dynamic columns can be understood as a variation of three dynamics. Second, the use of *mp* in the first column can make a perfect dynamic palindrome. As shown in Fig. 2-10, the discordance of dynamics between the first and last columns prevents forming a dynamic palindrome. As the rhythm and the techniques form palindromes in this cell, it would be natural to expect a dynamic palindrome also. Third, the corresponding cell in *Miroir* has *mp* instead of *mf* in the first column of dynamics.

It is not unreasonable that the *mf* in the first column should be replaced with *mp*. As the publishers changed the diamond-shaped note to a regular note to match the note shape of the corresponding *Miroir*, it would be possible to consider the *mf* sign shown in Fig. 2-10 as another mistake of the composer's, then change it to *mp* to match the dynamics of the corresponding *Miroir*. This dynamic change makes sense in numerous ways, but it is still hard to draw a definite line whether it is a intended variable factor or just a mistake.

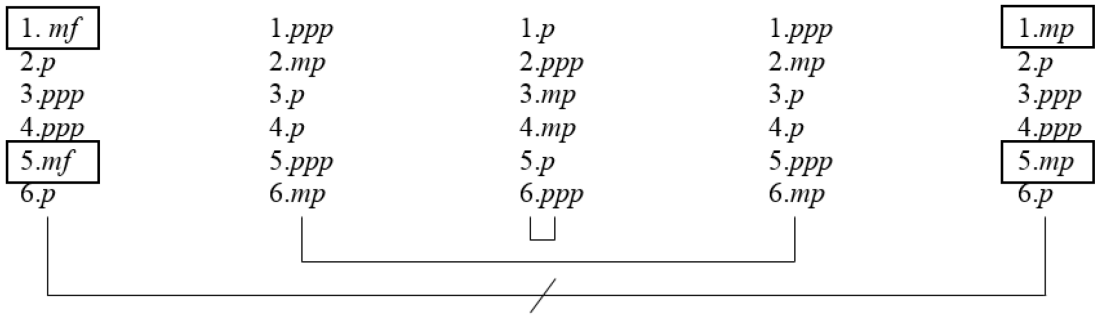


Figure 2-10. Dynamic columns of cell 4 of *cahier* B *Original*

Another issue is a more related to performance. There are lots of grace notes in the score which have different flags. Some grace notes have only one flag, as in the grace notes of cell 3 of *cahier* A *Original*, while others have two or three flags. How should these different grace notes be treated? Boulez started an experiment about how to treat irrational values, such as grace notes and fermatas, in his music. In *Pli selon pli* (1957–89), he used different types of grace notes and the successive use of fermatas to experiment with interpreting these irrational values within the framework of other definite musical parameters. The interpretational experiment of different grace notes in *Domaines*, therefore, should be freely made by the soloist as long as it stays within the definite rhythmic boundaries of each musical context. It is a fascinating to recognize the dualistic character Boulez asked for. On one hand, he asked the soloist to follow the written rhythm strictly. On the other hand, he asked for interpreting different grace notes that do not have definitive rhythmic values. This dualism of rational rhythm and irrational rhythm can be understood as a hidden structural pair in *Domaines*. From the performance aspect, one might complain that obeying this level of subtlety is absurd. On the other hand, one might think it is possible to reflect these subtle difference of grace notes in the playing. Indeed, Boulez made a beautiful maze, and it is performer's responsibility to work it out.

Chapter 3: YUN, *RIUL*

1. The Composer's Life and his Works

Isang Yun was born on 17 September 1917 in Sanchung, Gyeongsangnam-do, Korea (present-day South Korea) and grew up in Tongyeong, a port city. His father, Ki-hyeon Yun, was a scholar who did not much care about domestic life, but only studying and writing poems. Yun was the first child of Ki-hyon and his concubine. He studied at Seodang, a village school where students learned Chinese literature, for three years, then entered a common school (or what we would call an elementary school) at age 8. There he heard the sound of a reed organ for the first time and also hymn tunes from a nearby church. After graduation, he entered Hyupsung School, a commercial school, to follow his father's wishes.

Without his father's permission, Yun moved to Seoul to study music at age 17. He studied composition and basic harmony with a violinist and a composer who had been a student of Franz Eckert, the founder of the first Western-style military band in Korea. Yun composed *Songs of a Shepherd*, a collection of children's songs, in 1935. That same year, his father agreed to Yun studying music. Then he went to Japan to enter the Osaka Music School, where he studied cello, music theory, and composition for two years.

After returning to Korea in 1937, Yun taught music at Hwayang School, an elementary school. In 1939, he went to Tokyo to learn composition from Tomojirō Ikenouchi, who had studied composition and piano in Paris. Yun came back to Korea right before the beginning of the Pacific War in 1941 because he received the news of his mother's death. He was imprisoned for two months by Japanese officers because of the songs he composed in 1944. Since the songs were written in Korean, that was considered a rebellious act during the Japanese colonial era. Yun was hospitalized because of pulmonary tuberculosis when the liberation of Korea happened in 1945.

He moved back to Tongyeong, joining the Tongyeong Culture Association as leader of its music branch. However, this work did not last long because of the chaos of the postwar period.

In 1946, Yun moved to Busan, a harbor city in Korea close to Japan, and established an orphanage. He took care of orphans who were coming back from Japan every day with the support of the U.S. military. After a year, however, he left that job after struggling against slander from people who wanted to get aid goods from the U.S. army.[38] He came back to music, organizing the Tongyeong String Quartet in 1947 and playing the cello in it. He also taught music at Tongyeong Girl's High School and later at Busan Common School and Busan High School. In 1948, Yun collapsed with severe hemoptysis that resulted from his tuberculosis. After three weeks of hospitalization and three months of convalescence, he came back to work. There he met Sooja Lee, a teacher of Korean at Busan Common School who later became his wife. They married in January 30, 1950. Before the wedding, Yun published a collection of songs called *Dalmoori* (A ring around the moon) with his fiancée's financial support.

The Korean War began on 25 June 1950. The school was closed because of the war and Yun and his wife had to sell everything valuable, including their wedding rings and his cello, in order to survive. Yun's wife delivered a daughter, Jung Yun, in the middle of the turmoil of the war in November 1950. After the armistice in 1953, refugees were able to move back to their homes and Yun's family moved to Seoul. He and his family suffered from financial hardship and Yun had to work at Yangjung High School despite being not really healthy enough to work. Yun and his wife had a son, Wookyung, in January 1954.

In April 1956, at the age of 39, Yun was awarded the Seoul Culture Prize for his *Piano Trio* and *String Quartet No. 1*. He decided to study composition in Europe. At the Paris Conservatory he studied composition under Tony Aubin and music theory under Pierre Revel in 1956–57. Yun was dissatisfied with his studies in Paris because of financial difficulties resulting

---

[38] Sooja Lee, 내 남편 윤이상, vol. 1 (Seoul: Changbi, 1998), 79.

from the high tuition[39] and lack of teachers who could teach contemporary compositional techniques. He moved on to West Berlin and studied at the Musikhochschule Berlin (today the Berlin University of the Arts) under Boris Blacher (composition), Reinhard Schwarz-Schilling (counterpoint, canon, and fugue), and Josef Rufer, a pupil of Schoenberg (twelve-tone technique) in 1957–59. His financial situation became relatively better in Berlin because of the low tuition, scholarships from a Catholic foundation, and living expenses about one-third those of Paris.

In September 1958, Yun attended the Darmstadt Music Festival and encountered the music of avant-garde composers such as Karlheinz Stockhausen, Luigi Nono, Pierre Boulez, Bruno Maderna, and John Cage. Yun declared his compositional path in a letter that he wrote to his wife from the festival.

> I do not want to write this kind of music [John Cage's] at any price, nor follow the freaks gathered here [avant-garde composers]. I could surprise the audience by making even more outrageous music. However, I want to stay pure within the boundary of "music." I don't want to be a leading composer by doing newfangled stuff.[40]

Yun's *Fünf Stücke für Klavier* (1958) was premiered at the Gaudeamus Music Festival in Bilthoven, the Netherlands (September 1959). His *Musik für sieben Instrumente* (1959) was premiered at the Darmstadt Music Festival the same month. Both pieces were based on twelve-tone technique, but Yun's distinctive compositional methods such as long melody lines and *Haupttontechnik* (principal tone technique) based on East Asian philosophy were already present. In June 1960, his *String Quartet No. 3* (1959, revised 1961) was premiered at the International Society for Contemporary Music (ISCM) in Cologne. The slow movement was originally composed as Yun's graduation examination at the Musikhochschule Berlin in 1958. He composed it in a conservative style in consideration of the conservative composition faculty, but

[39] Yun had to pay extra tuition at Paris Conservatory because he exceeded the normal student age limit of the institution.

[40] Lee, 내 남편 윤이상, vol. 1, 155.

most of the faculty members could not understand the piece anyway. He added two movements and revised the slow movement to submit the work to ISCM.[41]

Yun moved to Freiburg in 1960. He gave a series of lectures about ancient East-Asian music for several broadcasting companies in West Germany. Three broadcasting companies commissioned him to write orchestra works after his success at Darmstadt. He wrote *Bara* for orchestra (1960), *Colloïdes sonores* for string orchestra (1960), and *Symphonische Szene* (1961) to commissions from the Berliner Rundfunk, Rundfunk Hamburg, and Hessischer Rundfunk, respectively. Although the premiere of *Bara* received some good reviews, orchestra musicians from the NDR-Sinfonie, which premiered *Colloïdes sonores* initially refused to play the work because it they found it too complex to play. The audience was not favorable towards the work either. The premiere of *Symphonische Szene* in Darmstadt had similar reactions from players and audience. Yun realized from these experiences that he needed to become more practical about the technique he was demanding from performers.[42]

Yun's wife came to Germany in 1961 to stay with him. At that time South Korea was experiencing political turmoil: a rigged presidential election on 19 March 1960, the April 19 revolution to nullify the fraudulent presidential election, the establishment of the Second Korean Republic on June 15, and a military coup d'état organized and carried out by Park Chung-hee and his allies on 16 May 1961. Yun wanted to bring his whole family to Germany to avoid the political situation in Korea, but for financial reasons only his wife was able to come.

Yun composed *Loyang* (洛陽) for chamber ensemble (1962) to submit it to the composition competition hosted by Sprengel, a chocolate company in Germany. He wrote the work in the hope of receiving the prize money, to alleviate his financial hardship, but the work did not win a prize. It did, however, have a huge success when it was premiered in January 1964 at the Tage der neuen Musik (Days of New Music) in Hannover.

---

[41]Lee, 내 남편 윤이상, vol. 1, 179.

[42]However, most of Yun's compositions still require a high degree of performance ability.

Yun and his wife visited North Korea in 1963 to meet a friend of Yun's who had fled there for refuge during the Korean War and also to see 四神圖 (Sa-shin-do). These paintings of four imaginary beasts, located in an ancient tomb located in South Pyongannam-do, were believed to protect the four directions in ancient Chinese culture and during the Goryeo dynasty, a Korean kingdom established in 918. Yun put a copy of the paintings up on the wall of his house in Germany around the time he visited North Korea and received a great amount of interest in them. But his visit to North Korea caused him and his family tremendous trouble four years later.

In 1964, Yun was selected to receive a scholarship from the Ford Foundation. He moved to Berlin with his wife and brought his children to Germany. There he could focus on his composition without financial concerns for the first time in Europe. In 1965, his oratorio *Om mani padme hum* (1964), using Buddhist scriptures as text, was premiered in Hannover. Gustave Rudolf Sellner, a director of the Berlin Opera Theater, commissioned Yun to compose an opera based on an Oriental story. He wrote his first opera, *Der Traume des Liu-Tung,* in 1965, based on a story by 馬致遠 (Ma Chi-Yuan, a famous fourteenth-century Chinese poet). The work was premiered at the Berlin Art Festival in 1966. Yun's composition *Réak* (禮樂) for large orchestra was successfully premiered at the Donaueschingen Music Festival in the same year.

Yun was abducted by the Korean Central Intelligence Agency (KCIA) in 1967. The military regime of South Korea fabricated a political event, the so-called East Berlin Affairs, to deflect the anger of the Korean public caused by a fraudulent election. KCIA accused a total of 194 international students and overseas Koreans who lived Germany and France at that time of conducting espionage activities connected with North Korea. Yun was tortured by KCIA agents and later sentenced to life imprisonment at his first trial. He attempted suicide in an interrogation room because of days of torture. While he was imprisoned, however, he composed three works to

prove his belief that even though they could lock up his body up, they could not touch his spirit.[43] His opera *Die Witwe des Schmetterlings* (1968) was written in a prison cell and two other works, *Images* for Flute, Oboe, Violin, and Violoncello (1968) and *Riul* for Clarinet and Piano (1968), were written in the hospital because of his sickness. The final court sentenced Yun to ten years in prison even without the espionage charge, but he was released on 25 February 1969 because of complaints from the government of Germany and well-known European musicians such as Herbert von Karajan, Ernst Krenek, György Ligeti, and Stockhausen.[44]

Later Yun wrote about his compositional path after the political "incident."

> Actually, my artistic attitude was nonpolitical before the incident. However, Park Chung-hee [the president of South Korea] and Kim Hyung-wook [the head of KCIA] made me politically awaken by the incident in 1967. I clearly witnessed evil men who drove the destination of the nation into the slough of destruction. Since that incident, I have been composing political music and I will keep doing so.[45]

After he went back to Germany in March 1969, Yun composed many works about the blind spots of human rights and to demand efforts for peace. He taught at the Hochschule für Musik, Theater und Medien Hannover in 1969–70. After 1970, he became member of the composition faculty at the Berlin University of the Art and taught many students from the United States of America, Japan, China, Hong Kong, and both North and South Korea until 1985. After retirement, he contributed to the musical world by composing many works and giving lectures about his philosophy and music.

Yun died on 3 November 1995 at his home in Berlin. He was recognized as a leading composer in Europe during his lifetime, but he and his music were unfairly treated in South Korea for a long time because of political problems.

---

[43] Lee, 내 남편 윤이상, vol. 1, 290.

[44] The military regime later released all accused prisoners of the "East Berlin Affairs," including two death-row convicts in 1970. This incident shows how corrupt the Third Republic of Korea was at that time. The incident caused Yun to decide to be a German citizen in 1971.

[45] Lee, 내 남편 윤이상, vol. 2, 14.

Yun was a prolific composer. He composed 5 operas, 14 choral/vocal works, 25 orchestral works, 10 concertos, 7 works for chamber ensemble, 44 chamber works, and 18 works for solo instrument. Considering that it is rare for a contemporary composer to write as many works and he only acknowledged those made after his study in Europe at the age of 40, his relentless efforts are admirable, not to mention his great contribution in grafting East Asian philosophy onto Western European art music.

2. Compositional Analysis of *Riul* [46]

i. Yun's compositional philosophy

Most research about Yun's works and his philosophical stance has been performed mainly in Korea and Germany—understandably, given that he was a Korean–German composer who lived almost half his life in Korea and the other half in Germany. As mentioned in the section on Yun's background, he had many dramatic turns in his life, including political burdens that haunted him for the rest of his life. Even though he began his musical career in Korea, he acknowledged only his compositional output made after studying in Europe. He was born in Korea, but he could not visit his homeland for a long time because of the political conflict between him and the government of South Korea. He died in Germany as a German citizen, but he always aspired to reflect the sound of Korea, or rather the sound of East Asia as the composer called it, and contemporary political incidents of Korea in his music.

It is fascinating to observe the diversity of research topics about Yun and his music. The composer himself left numerous interviews and lectures about his music and his philosophical ideas. Many analyses of Korean traditional music have found similarities, or origins, of the

[46] Yun explained multiple meanings of the word *Riul* on the piano part. 'The Korean word Riul has several meanings: flowing melodic line, rhythm, law. The title refers here to the great melodic bows of the clarinet, to the richly ornamented main notes, Riul is also referred to a special playing style of Korean woodwind instruments.' (my translation)

techniques Yun often used in his works. Some researchers have tried to connect his musical output with his biographical, cultural, and political background. Other researchers have explained his musical characteristics through his Oriental philosophy. And finally, researchers have approached his music by figuring out what musical elements Yun considered more important than others, based on conversations made between the composer and performers.

From the myriad researches about Yun and his music, I have chosen a single excerpt to represent his compositional philosophy and to examine how it was reflected in *Riul*. He wrote an article in August 1987 (unpublished at the time):

> My music basically takes the nutrients of Asian philosophy to suit my birth. In addition, the perception of melodic continuity and constant color change by means of musical interpretation make two basic axes, both of which are dissolved into one. So people often describe my music as a "Yin–Yang"[47] principle in the East Asian sense. This means the pluralism in the monism and the monism in the pluralism. This can be understood as a correlation or interrelationship of works in the frame of European art. This creates a new unity. While the perception of sound is Asian, it is from a European point of view that this perception is technically expressed…. This is not a realization of a unified global culture, but an attempt to find an alternative answer, a new artistic awareness, based on the cultural tensions already mentioned.[48]

The rest of the analysis sections focus on analyzing *Riul* based on this statement of Yun's. The main subjects of the analysis are melodic continuity, foreground color change with the use of the same hexachord, and the integration of different compositional ideas into one melodic flow. The integration issue will be examined more in depth at the end to show how the foreground-level expressions of the work are interwoven with the higher levels of the structural setting.

---

[47] Original meaning of the word means sunshine and shade, but it also means two principles explaining the creation and change of all things in the universe. The first principle is the principle of creation and existence that Yin and Yang create objects and make them exist by opposing and relying each other. The second is the principle of change that Yin and Yang continuously circulate and switch their state.

[48] Isang Yun, "Nationalkultur und Weltöffentlichkeit," quoted in Dörte Schmidt, "Yun und die identitätsstiftenden Möglichkeiten der Kunst in Europa," in *Isang Yun's Musical World and the East-Asian Culture*, ed. the Musicological Society of Korea and the Isang Yun Peace Foundation (Seoul: Yesol, 2006), 296 (my translation).

ii. Standard twelve-tone practices of *Riul*

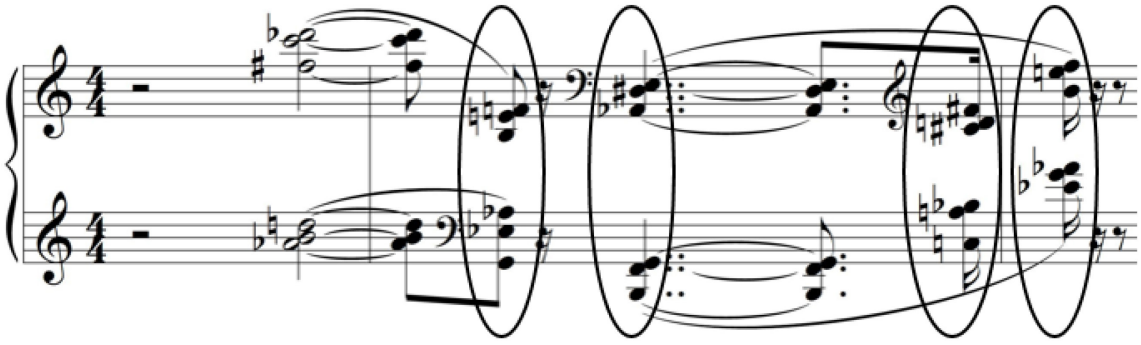
It is evident that Yun applied a lot of standard twelve-tone techniques including hexachordal combinatoriality in *Riul*. Yun's use of hexachordal combinatoriality and its implications in the work will be discussed in detail in next sub-sections. Yun used standard serial operations such as transposition, inversion, retrograde, and retrograde-inversion to manipulate rows throughout the work. A few examples of such operations are: P_6 is presented in m. 3 that is the first melodic deployment of a twelve-tone row in the piano part; the clarinet melody in m. 6 presents P_8, transposition of P_6 by T_2; the right hand part of the piano presents R_0 in m.12; I_4 in m. 54 of the piano; RI_5 in m. 27 of the clarinet.

a. Hexachordal prime form

Any twelve-tone series in *Riul* can be understood as a combination of two hexachords that have the same prime form, (012458). For example, P_{10} is constructed of two hexachords, [6, 5, 4, 2, 1, 10] and [7, 8, 9, 11, 0, 3]. The prime form of both hexachords is (012458). Thus, when a twelve-tone series is deployed in any form, it presents (012458) twice.

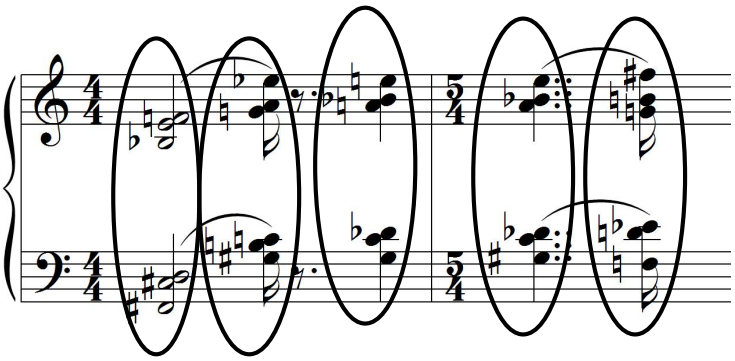
When constructing a twelve-tone series for *Riul,* Yun must have had this unique quality of the series in mind. Therefore it would be logical to consider (012458) as a unifying force of the work. Vertical presentations of multiple pitch classes (chords) can be examined to find the presence of (012458).

Fortunately, it is not hard to find (012458) in vertical sonorities of the work. In fact, it would be unnecessary to state all the vertical presentation of (012458) because there are so many examples of it. Let us look for just some examples instead. In m. 2, the piano plays four hexachords as shown in Ex. 3-1. The first, second, and last have the same pitch classes in the set, [3, 4, 5, 7, 8, 11], and the third hexachord has [0, 1, 2, 6, 9, 10]. The prime form of these four hexachords is (012458).



Example 3-1. Piano, mm. 1–3, hexachords

A series of chords in mm. 5–7 also feature a succession of the prime form (012458) five times in a row, as shown in Ex. 3–2.



Example 3-2. Piano, mm. 5–7, chords

The succession of two aggregates shown in Fig. 3–1 is another good example of (012458). The three pitch classes of the second set (9, 0, 1) are stacked together, and the stacked notes have no pitch order. However, there is no problem to see the presence of (012458) throughout all four hexachords.

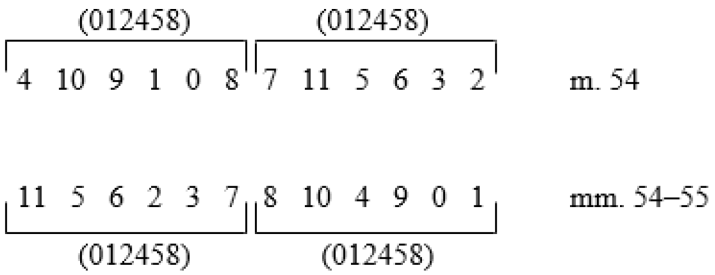


Figure 3-1. Presence of (012458)

Although (012458) dominates the score, sometimes each instrument projects different hexachordal prime forms. The clarinet in m. 45, for example, plays an aggregate at the end of the melody line. Before playing the last set, the clarinet repeats (012458) several times, in a slightly different pitch order each time. Meanwhile, the last set projects (012468), which is also used in the opening of the next clarinet melody in m. 47. From the viewpoint of the twelve-tone technique, the clarinet melody seems to end strangely in m. 45, since the pitch order of the last set is different from in the previous sets. However, this change makes perfect sense at the hexachordal level. The clarinet melody anticipates the shift of prime forms from (012458) to (012468) at the end of the melody (m. 45), and the projection of (012468) continues at the beginning of the next clarinet melody, as shown in Fig. 3–2.

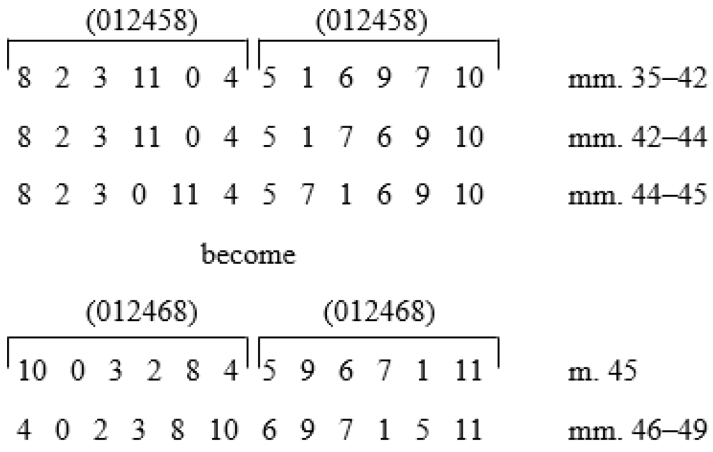


Figure 3-2. Shift of prime forms in the clarinet melody (mm. 35–49)

b. Hexachordal combinatoriality and continuity

Yun uses various forms of the twelve-tone series throughout the work, as shown in Fig. 3–3. They appear random from the foreground level. At the highest levels of structure, however, a connection between the different series can be made by looking the hexachordal combinatoriality.

In *Riul*, all the series have two hexachords, and the prime form of the hexachords is (012458). The hexachord (012458) is R-combinatorial at R_0, as are all other hexachords, and I-combinatorial at sum 11. Take into account that when discussing the hexachordal combinatoriality, only the content of the hexachords matters, not the order.

		H_1						H_2						
	I_{11}:	11	5	4	8	7	3	2	6	0	1	10	9	clarinet mm. 1–2
	P_6:	6	0	1	9	10	2	3	11	5	4	7	8	piano m. 3
	P_8:	8	2	3	11	0	4	5	1	7	6	9	10	clarinet m. 6, 42
	R_0:	2	1	10	11	5	9	8	4	3	7	6	0	piano m. 12
	RI_5:	3	4	7	6	0	8	9	1	2	10	11	5	clarinet m. 27
	RI_4:	2	3	6	5	11	7	8	0	1	9	10	4	piano m. 46
	I_4:	4	10	9	1	0	8	7	11	5	6	3	2	piano m. 54
	P_{11}:	11	5	6	2	3	7	8	4	10	9	0	1	piano mm. 54–55
(Incomplete)	P_{10}:	10	4	5	1	2	6	7	3	9	8	11	0	piano m. 55
	RI_7:	5	6	9	8	2	10	11	3	4	0	1	7	clarinet m. 75
	I_7:	7	1	0	4	3	11	10	2	8	9	6	5	clarinet m. 79
	R_7:	9	8	5	6	0	4	3	11	10	2	1	7	piano m. 120
	RI_{11}:	9	10	1	0	6	2	3	8	7	4	5	11	clarinet m. 138
	I_1:	1	7	6	10	9	5	4	8	2	3	0	11	piano m. 194

Figure 3-3. List of various forms constructed by hexachordal combinatoriality

Let us look at how Yun used the combinatorial qualities of the hexachord (012458) in *Riul*. At the beginning of the piece, the clarinet plays I_{11} twice with slight order changes within the boundary of each hexachord. Some series shown in Fig. 3–4 also have a slightly different pitch order in the score than I_{11} at the beginning. The piano plays P_6 in m. 3. I_{11} in the clarinet and P_6 in the piano together result in the aggregates shown in Fig. 3–4. Note that the result of adding corresponding elements is 5 (index number 5, or sum 5).

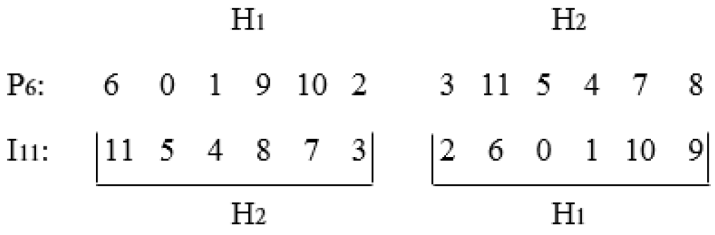


Figure 3-4. Hexachordal combinatoriality between P6 and I11

R0 in the piano (m. 12) and RI5 in the clarinet (m. 27) also make aggregates, as shown in Fig. 3–5. Again, the corresponding elements of the two series have a fixed sum of 5.

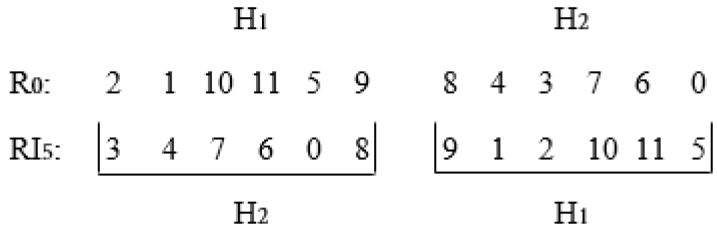


Figure 3-5. Hexachordal combinatoriality between R0 and RI5

The next example of combinatoriality includes R-combinatorial, I-combinatorial, and RI-combinatorial. Hexachords of RI4 in the piano in m. 46 make aggregates with hexachords of I4 right after RI4. Then hexachords of I4 make another group of aggregates with P11. Four hexachords of the first series (RI4) and the last series (P11) together also make aggregates, as shown in Fig. 3–6. The index number (sum) is 3, which maps the hexachords onto each other between I4 and P11 (in the case of RI4 and P11, the first note in one set corresponds to the last note in the other, the second to the second-to-last, and so on).

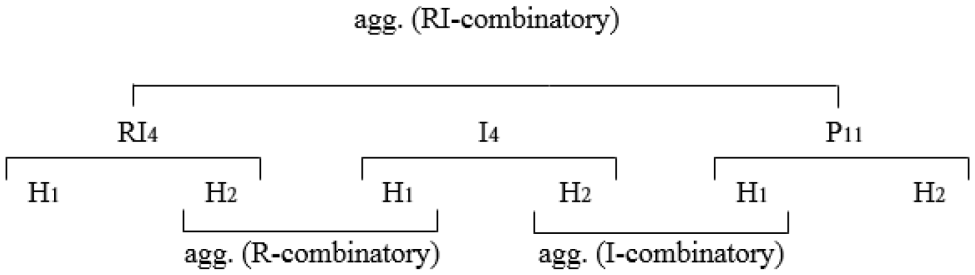


Figure 3-6. Example of three types of combinatoriality

As in Schoenberg's use of combinatoriality in his String Quartet No. 4, the three examples above (Figs. 3–4, 3–5, and 3–6) can be understood to represent structural areas similar to the tonicized keys in a tonal piece. Since the hexachord (012458) is an I-combinatorial series, there will be twelve such areas, each containing four series-forms, as shown in Fig. 3–7.

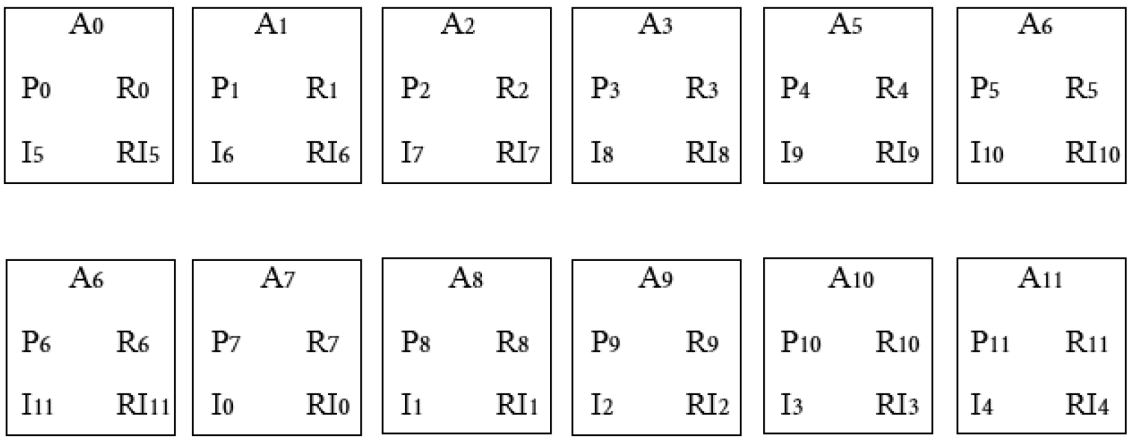


Figure 3-7. The 12 combinatoriality groups representing 12 keys

Two series, P_6 and I_{11}, therefore designate the area of A_6 at the beginning of the work. R_0 and RI_5, shown in Fig. 3–4, on the other hand, designate the area of A_0 together. The three series shown in Fig. 3–5, RI_4, I_4, and P_{11}, can also be understood to designate the area of A_{11}.

The P_{11} form in m. 54 is transposed at T_{11} in m. 55, making an incomplete P_{10}. The P_{10} form is not completely finished: the last two pitches of the series are left to the middle of the next aggregate in m. 56. It seems that the series has been dissolved back into a twelve-tone set after making successions of the three series, as shown in Fig. 3–6. The music proceeds without displaying a series for a while, until the R_7 form emerges in m. 120 in the piano. The clarinet plays the RI_{11} form in mm. 138–42. As shown in Figure 3–7, P_{11} belongs to A_{11}, and it is transposed at T_{11} to move to P_{10}, which belongs to A_{10}. Similarly, the R_7 form in the piano, which belongs to A_7, is transposed at T_{11} to move to RI_{11}, which belongs to A_6. See Fig. 3–8.

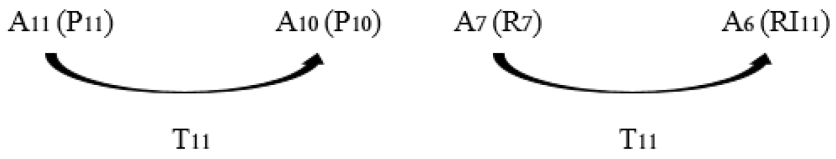


Figure 3-8. Two key areas transposed by 11

Between two transpositions of key areas shown in Fig. 3–8, the clarinet plays RI_7 in m. 75 and I_7 in m. 79, both belongs to the area A_2. At the end of the work (m. 194), the piano presents the I_1 form, which does not seem to make aggregates with any adjacent series. However, the P_8 form that appears twice in the beginning section of the piece (mm. 6 and 42) can create aggregates together with I_1. The last two series of the work, P_6 and I_1, therefore, can be understood as a kind of recapitulation of the A_6–A_8 progression that appeared at the opening of the piece. The disposition of A_6–A_8 progressions at the end also alludes to the new beginning of melodic flow, creating the possibility of an endless circulation of the melodic line, as shown in Fig. 3–9.

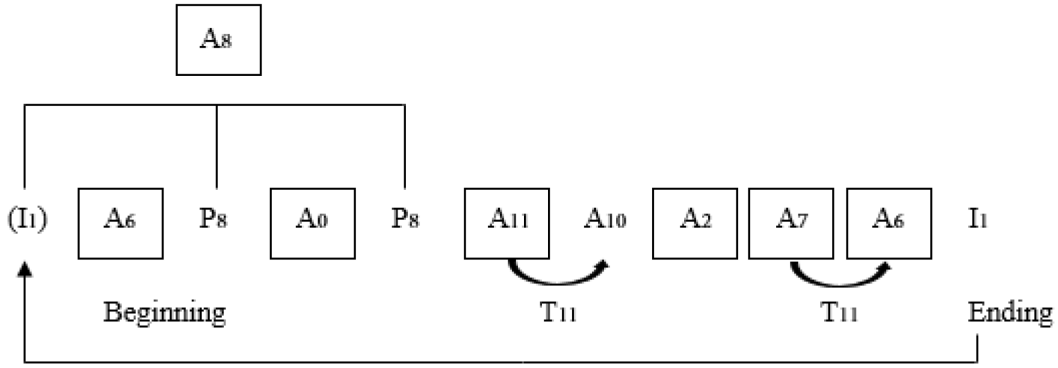


Figure 3-9. Overall structure of *Riul*

iii. Structural transposition and their implications

As shown in Fig. 3–9, there are two structural transpositions of T_{11} in *Riul*. Another structural transposition can be found if all the structural areas are mapped on (012458), the prime form of the hexachords. As shown in Fig. 3–10, if A_0 is considered a transposed area from A_{11} at T_1, all the remaining structural areas of *Riul* can be mapped onto the prime form of the hexachords.

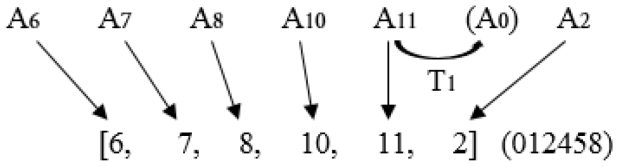
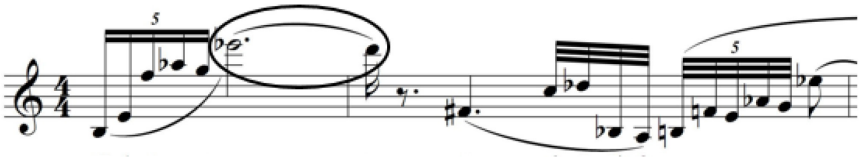


Figure 3-10. Structural areas representing the hexachordal prime form (012458)

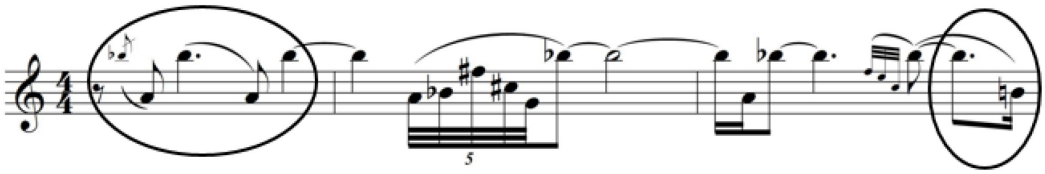
From Figs. 3–9 and 3–10, the existence of two structural transposition levels of 1 and 11 is confirmed. Both pitch-class intervals of 1 or 11 are prominent in different forms of the series. This shows Yun's clear intention to emphasize those transposition levels in the construction of the series. In mod 12, 1 and 11 are complementary. It then might be possible to recognize these

numbers as a musical acknowledgment of yin and yang, the two cosmic forces that complement each other. Let us check on how Yun articulates these two transpositions on the foreground level of the score. At the beginning, the clarinet plays a soaring melodic figure that ends with descending chromatic movement, as shown in Ex. 3–3.[49]



Example 3-3. Clarinet, mm. 1–2

Many examples of either descending chromatic movement or ascending chromatic movement can be found at the end of the clarinet's melody lines throughout the score. A few notable examples can be found in mm. 1–2, 5, and 25–26 (descending); mm. 60–61 and 93 (ascending); and mm. 193–94 (descending), the last melodic movement in the piece. An example that contains both types of movements can be found in mm. 50–52, as shown in Ex. 3–4. In pitch-class space, the clarinet melody moves chromatically a half step up or down from the center tone Bb, but the actual intervals from Bb5 in the score are either a minor 9th or a diminished octave.

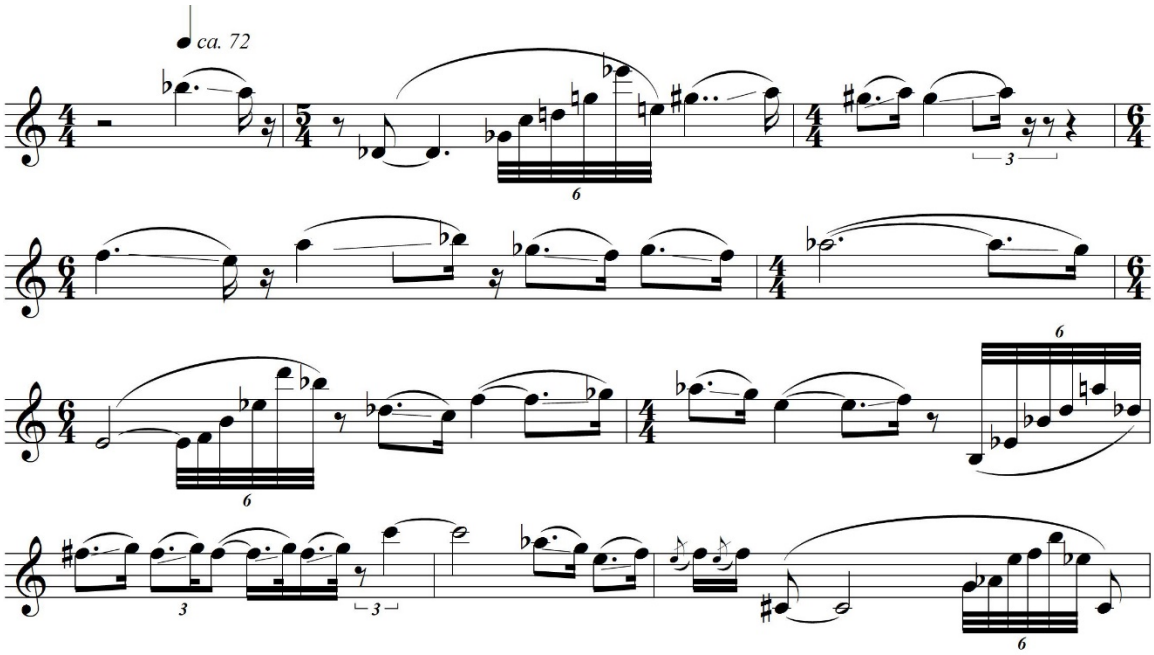


Example 3-4. Clarinet, mm. 50–52

From m. 80, where the tempo changes to quarter note = 52, the clarinet melody frequently ends with descending half-step glissandi that emphasize T11. In fact, all the glissandi in *Riul* are either half step ascending or half step descending, which respectively mean either T1 or

[49] Of course, there are many other semitones in the passage shown in Ex. 3-3.

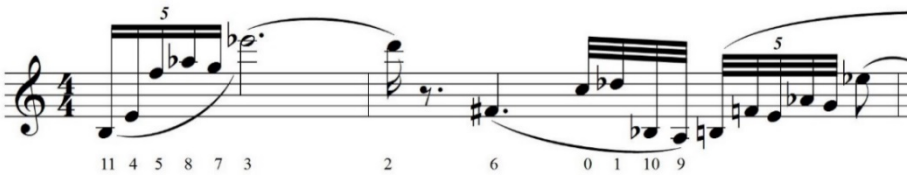
T11. The glissandi also emulates the sound of *piri*, a Korean instrument which uses various degrees of pitch bending as a standard playing technique. A climax produced by using both types of glissandi can be found in mm. 170–79. The use of both types of glissandi is prominent, as shown in Example 3–5. This section is also temporally distinguished (quarter note = 72) from the tempi of the surrounding sections (quarter note = 66 before the section and quarter note = 60 after the section).



Example 3-5. Clarinet, mm. 170–79

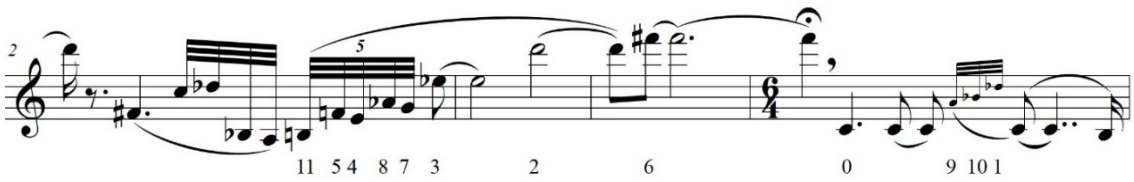
iv. General observation on distinctive characters of *Riul*

As discussed in previous sections, Yun applied standard principles of twelve-tone music to this work. In *Riul*, however, his use of the twelve pitch classes (aggregate) has distinctive characters.



Example 3-6. Presenting the use of all twelve pitch classes at the beginning of the clarinet melody

Example 3–6 shows the beginning of the clarinet line (mm. 1–2).[50] Yun deployed all twelve pitches in a clear way to create an initial melody line for the clarinet.

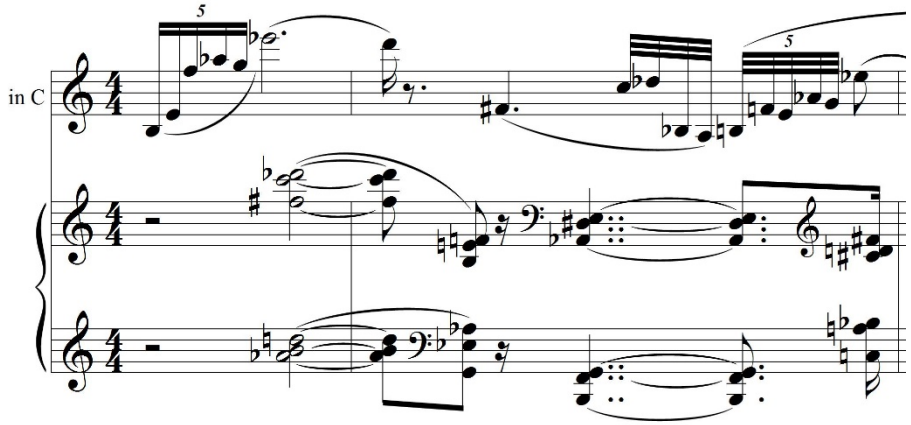


Example 3-7. Continued twelve pitch classes of the clarinet melody

Example 3–7 shows the clarinet part in mm. 2– 5. Another aggregate appears from the latter part of m. 2, where the numbering appears below the score. The second aggregate in the clarinet part includes repetition of two pitch classes, C and B, and extension of some note values, D, Eb, and F#, making a longer melodic line than the initial aggregate shown in Ex. 3–6.

Comparing the two consecutive aggregates in the clarinet part reveals two general compositional characteristics of *Riul*. The first is the continuity. The first aggregate shown in Ex. 3–6 is seamlessly followed by the other aggregate shown in Ex. 3–7 in the middle of m. 2. The melody lines of each aggregate contain a kind of break point in the middle; at the beginning of m. 2 (a dotted eighth-note rest) and the beginning of m. 5 (a fermata and a breath mark). However, these two break points in the clarinet part are concealed by the piano part, which fills the gaps in the clarinet melody as shown in Ex. 3–8. Overall, the disposition of two aggregates at the beginning of the clarinet melody alludes to one of Yun's main compositional principles: melodic continuity.

[50] All clarinet parts in this chapter are written in C for convenience of reading and analyzing.



Example 3-8. Piano part fills the melodic gaps in the clarinet part (mm. 1– 2*)*

The second characteristic found at the beginning of the clarinet melody is the variation of pitch order. In general, a twelve-tone series retains the order of pitch classes or transforms it in systematic ways in twelve-tone music. However, the order of twelve pitch classes is constantly changing in *Riul* as the music unfolds. For example, the order of two aggregates at the beginning of the clarinet melody is similar, but not the same, as shown in Fig. 3–11. Yun maintained the overall pitch-class disposition while making a slight change in the order of pitch-classes between the two aggregates. It would be questionable whether to consider these two groups of pitch classes two different twelve-tone series or one, because there are only small changes in the order of the pitch classes. This kind of resemblance of pitch-class order between repeated rows can be found many times throughout *Riul*. Traditionally rows related by transposition, inversion, or retrograde are considered "forms of the same row." In Yun's work, however, when he changes the order of notes only slightly, that could be considered another form of the same row also. This notion is questionable, because it's not clear how much the order has to change before it's no longer considered a form of the same row. But these changes of order appear to be something Yun does frequently in *Riul*, so it becomes part of his toolbox just like the standard serial

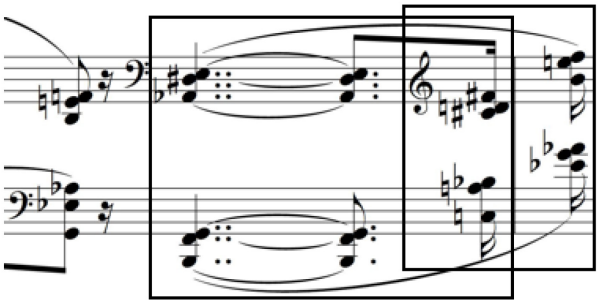
operations. Some of his procedures are fairly loose ones, and it would be appropriate to use that kind of terminology in some loose way also.[51]

It is impossible to observe the melodic repetition from the foreground level of the score, because the melodic contours are constantly changed when they are repeated. However, on the pitch-class level, it is noticeable that a long melody line spurts out from the initial row within each section. As the repetition occurs, each row gradually and continually changes its order until it becomes a completely different row. See Fig. 3–11.

11	4	5	8	7	3	2	6	0	1	10	9
11	5	4	8	7	3	2	6	0	9	10	1

Figure 3-11. Comparison of the order of the two rows in the clarinet melody (mm. 1–5)

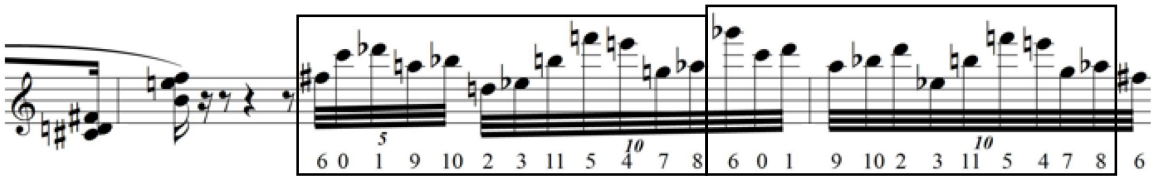
In the beginning, the piano plays an incomplete twelve-tone aggregate, missing 9 and 10, as shown in Ex. 3–8. The next group of three chords in mm. 2– 3 makes two consecutive aggregates, as shown in Ex. 3–9. The middle chord works as a pivot chord. It shares its pitch-class content [0, 1, 2, 6, 9, 10] with two chords that have the same pitch classes [3, 4, 5, 7, 8, 11] to form two successive aggregates.



Example 3-9. Vertical presentation of two aggregates in the piano part (mm. 2–3)

[51] I thank Julian L. Hook for advice on this concept.

After using two aggregates as chords, the right-hand part of the piano in m. 3 makes melodic use, a horizontal use, of an aggregate. As shown in Ex. 3–10, the right-hand piano part presents an aggregate twice in the same order. It has two important meanings in the work: 1) this is the first melodic presentation of a twelve-tone set in the piano part, and 2) the repetition of twelve pitch classes in the same order tells us its structural importance as explained before in section ii.



Example 3-10. Horizontal presentation of the two aggregates in the piano

One answer to the question of why *Riul*, or any other of Yun's works, is not easy to analyze could be the entangled compositional elements of the music. His works often contain opposite ideas intermingle and continuously change state. Although a melody seems to end at some point, for example, the structural frame continues to lead the end of melody to the beginning of another. Structural division points do not necessarily align with the end of melody lines, but the two aspects are intertwined, making a continuous stream of melody. In *Riul,* it is not clear where the starting point or the end of all the intricate musical interweaving is. It seems that the melody just continuously flows.

v. Haupttontechnik

Haupttontechnik (principal tone technique) is a composition technique that Yun devised, and it became a foundation of his compositional language. He used *Haupttontechnik* for the first time in his work *Musik für sieben Instrumente* (1959), in order to combine twelve-tone technique

and his own compositional technique. Yun composed the work based on twelve-tone technique, but denied the extreme principles of that technique. Instead, he allowed certain levels of freedom in treating the tone rows and emphasized an important pitch or pitch groups through the repetition. Yun described his composition method as follow:

> At that time, I made a chart of tone rows for each of my works, as Schoenberg taught. Various changes of twelve pitches from the tone row were arrayed on the chart. However, that was always a mere frame, and I used it only sometimes. When a strong musical inspiration came across my mind, I let it flow freely. I say free, but of course, it follows its own strict and distinct rules.[52]

Yun's composition technique is often called *Haupttontechnik* (principal tone technique) or *Hauptklangtechnik* (principal sound technique). In the Schoenbergian use of twelve-tone technique, a tone row, an aggregate of twelve pitch classes, creates the basic structure of a piece. In Yun's technique, however, an individual pitch-class, or pitch group, becomes the core of his composition while richly ornamented by surrounded pitches. Yun allowed an expanded sound spectrum to decorate the principal tone(s) on all such occasions in his music. This pitch, which is often considered the principal subject in listening to his music, became a minor element to constitute the form in that music. Yun clearly explained his compositional method by comparing it with the traditional musical languages of Europe:

> Whereby a single tone is relatively abstract, and the sequence of notes gains life in European music, a single tone lives already for itself in our [i.e., East Asian] music. You can compare our tones with brushstrokes as opposed to the stiff lines of pencils [i.e. in Western music]. From the beginning to the fading of the sound, every sound is subjected to change. Each tone is decorated with ornaments, appoggiaturas, glissandos, and dynamic changes. Above all, the natural vibration of each sound is consciously used as a means of design. The changes of the pitch are less regarded as melodic intervals, but are understood in their ornamental function and as a part of the various different ways in the expression of the same sound.[53]

---

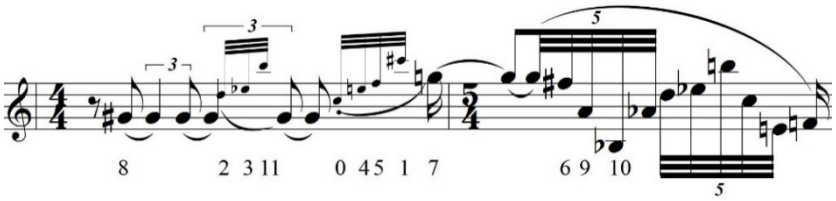
[52] Walter-Wolfgang Sparrer, "Isang Yun – Komponist der Gegenwart," in *Komponisten der Gegenwart* (Munich: text + kritik, 1992), quoted in *나의 길, 나의 이상, 나의 음악: 윤이상의 음악미학과 절학*, trans. Chung Gyochul and Yang Injung (Seoul: Hice, 1994), 74 (my translation).

[53] Gerhard R. Koch, "Das Nahe im Fernen: Isang Yun und der Westen," in *Isang Yun's Musical World*, 287 (my translation).

Yun explained clearly in lectures how a dense network of "neighbor tones," which does not sound like secondary (neighbor) notes at all, belongs to the so-called principal sound. Gerhard R. Koch, a German music critic, argued that if someone wants to find a counterpart of Yun's music in the European tradition, then the way leads not to Germany, but to pre-Classical French music. He gave an example of Couperin's harpsichord works that gives similar trouble to the audience and the performers. Individual notes are not important, but all *agréments* such as suspensions, trills, appoggiaturas, and other graces, need to be considered together to give meaning to the individual notes in Couperin's music, similar to Yun's compositional approach. Koch evaluated Yun's musical achievement as the reconciliation of the traditional sound system of Korean music with European ideas of closed form.[54]

vi. Melodic continuity

Earlier, the clarinet melody in mm. 1– 5 was examined, confirming that the two sets of twelve pitch classes, which have similar pitch-classes orders, are seamlessly connected as one melody line. The clarinet melody in m. 6 introduces a new twelve-tone aggregate, starting with G#4, as shown in Ex. 3–11.

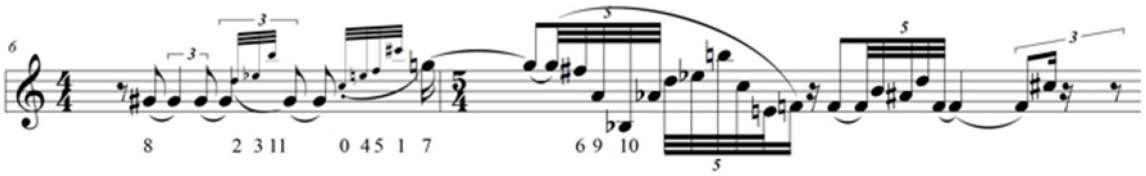


Example 3-11. Clarinet melody in mm. 6–7

After all twelve pitch classes are completed in the middle of m. 7, an extended melody line derived from the previous aggregate obscures the melodic boundary. It starts with the same

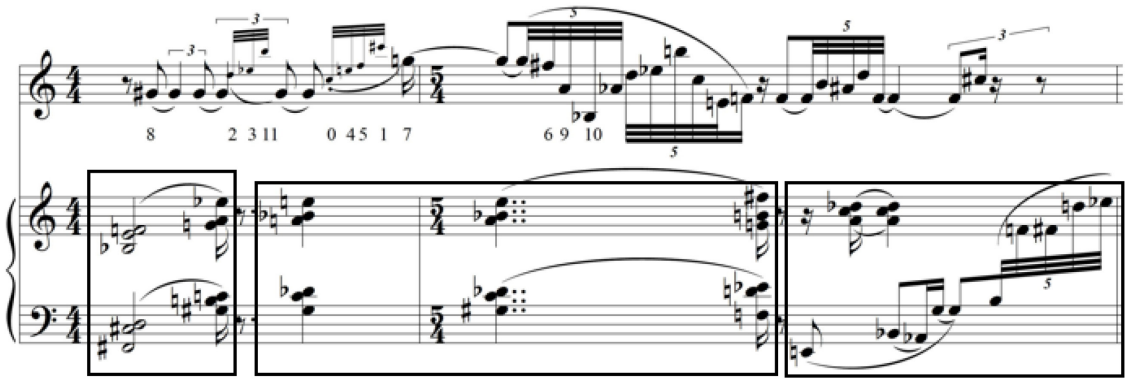
[54] Koch, "Das Nahe im Fernen," 288.

order of pitch classes as the previous aggregate until it reaches F4. Then F4 is repeated with brief ornamental notes, and it ends abruptly with C#, as shown in Ex. 3–12.



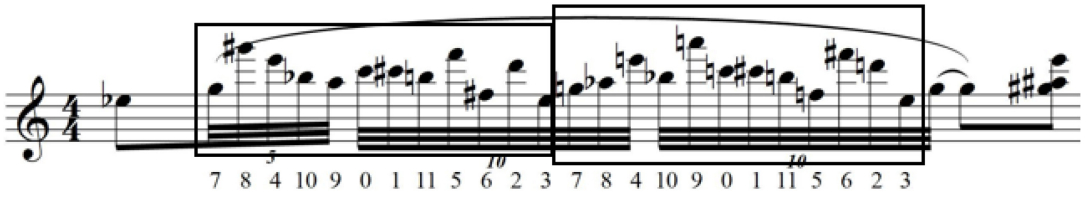
Example 3-12. Example 3–11 extended

While the clarinet melody completes an aggregate and starts to make a departure from the established aggregate as shown in Ex. 3–11 and 3–12, the piano plays two complete aggregates in a series of five chords. When the clarinet finishes its melody line at the end of m. 7, the piano has a new aggregate horizontally to connect the melodic break of the clarinet to the next aggregate, as shown in Ex. 3–13.



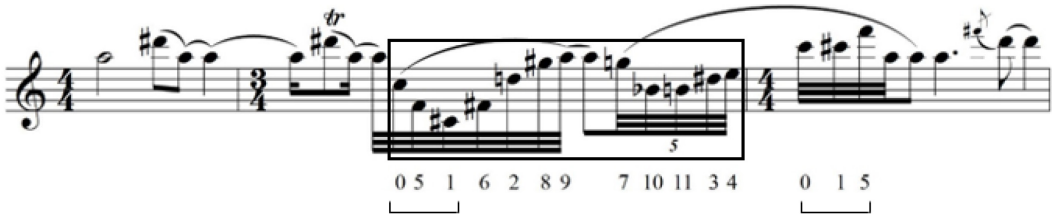
Example 3-13. Clarinet and piano, mm. 6– 7

At m. 8, while the clarinet holds the pitch A, the piano plays two aggregates in the same pitch order but presented in a different melodic contour when repeated as shown in Ex. 3–14.



Example 3-14. Piano, right hand, mm. 8

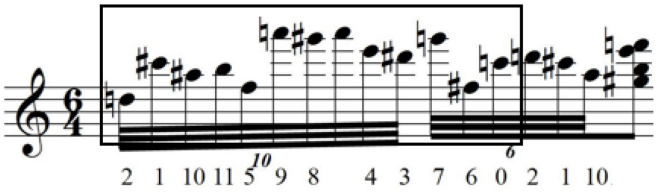
As the clarinet starts a melody line in mm. 9– 11 to embellish the local principal pitch A with a gradual increase of ornamental notes surrounding the A, a new aggregate appears in the middle of the passage, as shown in Ex. 3–15. It is worth noting that the three pitch classes C, C#, and F, located at the end of the ornamental melodic line of pitch A5 at the beginning of m. 11, are a fragment of the first three pitch classes used in the previous aggregate shown in Ex. 2–10. In a local structural perspective, the presentation of pitch-class A and its gradual melodic ornamentation ends in the middle of m. 11. However, the composer made the end point ambiguous by inserting three starting pitches of the previous aggregate at the end of the melody line to allude to a repetition of the aggregate.



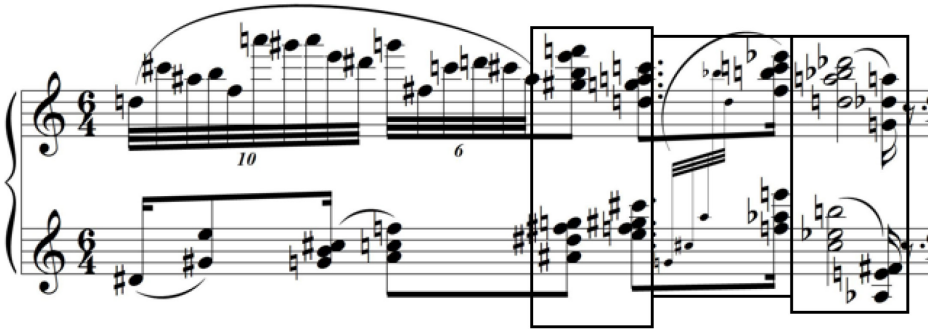
Example 3-15. Clarinet, part mm. 9–11

In m. 12, the right-hand part of the piano plays an aggregate as shown in Ex. 3–16. The first three pitches in the row, D, C#, and A#, are used after the completion of the aggregate to make a continuous melody line like the clarinet melody shown in Ex. 3–15. However, the

horizontal disposition of twelve pitch classes quickly turns its shape into a series of chords, using the twelve pitch classes in a vertical way, in the middle of m. 12, as shown in Ex. 3–17. The presentation of three pitch groups shown in Ex. 3–17 is different each time. The first group is comprised of two vertical chords, and the second group of grace notes with a chord, a mixture of the horizontal and vertical presentation. The last group has two chords the same as the first pitch group, but pitch class 5 (F) is omitted.



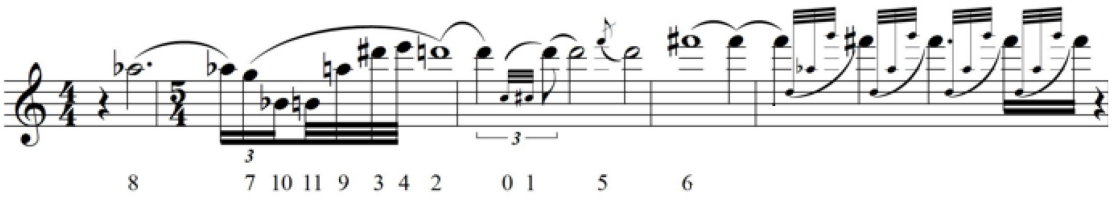
Example 3-16. Piano, right hand, mm. 12



Example 3-17. Piano, mm. 12, chords

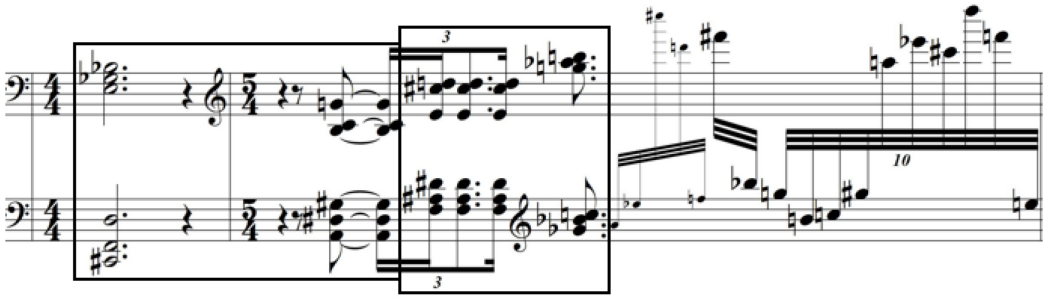
The piano part in m. 12 shows the interesting compositional characteristics of *Riul*: an abrupt change between horizontal and vertical dispositions of the twelve pitch classes, a variation of the chord presentations including omitted pitch material, and drawing the melody line by using part of the same, or a similar, pitch-class order from the established aggregate.

The clarinet melody in mm. 13–17 can be regarded as an extended aggregate emphasizing pitch classes D and F#, as shown in Ex. 3–18.



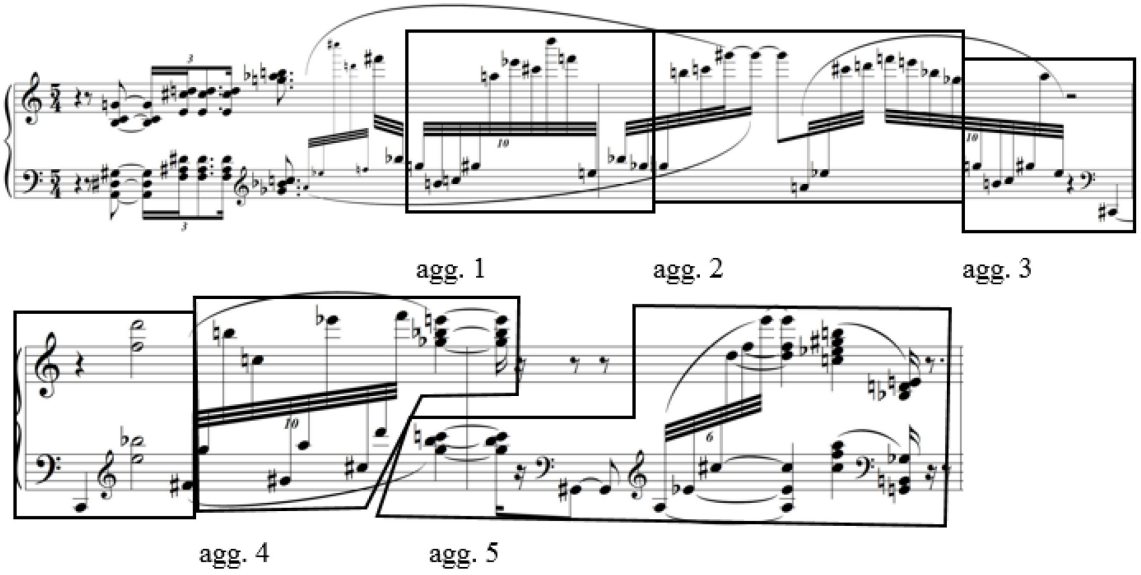
Example 3-18. Clarinet, mm. 13–17

While the clarinet plays brief ornamental figures to approach pitch D6 then holds that pitch for almost two measures, the piano has two aggregates in a vertical way. The dotted eighth-note chord shown in Ex. 3–19 shifts the vertical presentation of the aggregate into the horizontal swiping up and down melodic motions of the piano.



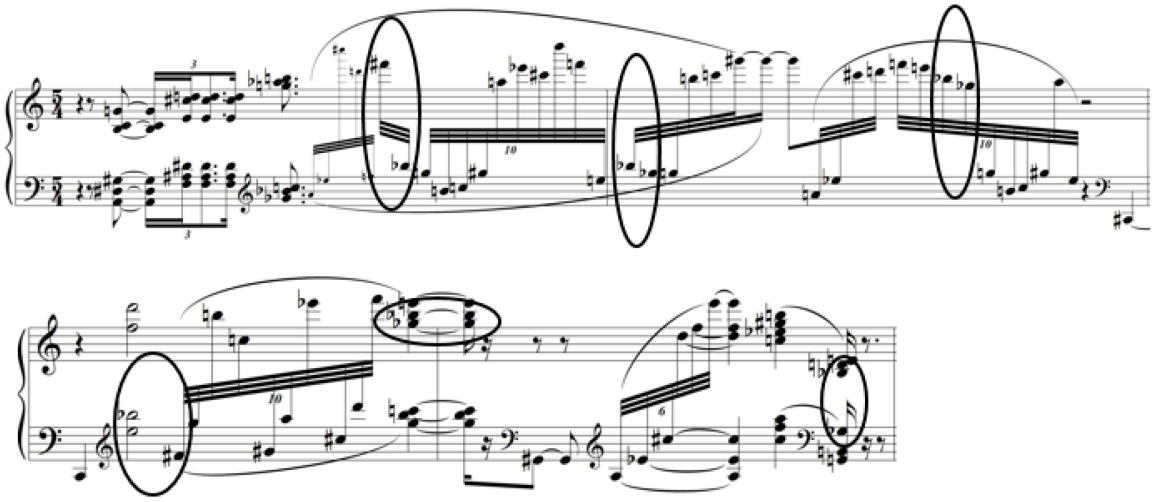
Example 3-19. Piano, mm. 13–14, chords

After playing five grace notes that do not belong to any aggregates around them, the piano has five continuous twelve-tone aggregates in almost the same pitch order. The first four aggregates are exactly the same pitch order, and the last includes the intervention of a chord before completing the aggregate. As Ex. 3–20 shows, the last three aggregates (3–5) include vertical presentations of the pitch classes. It would be impossible to number the pitch order for a chord, because all the pitches are played at once. Except for the vertical presentation of pitches, the overall pitch order of each aggregate remains the same.



Example 3-20. Piano, mm. 14–17, melodic presentation

Another feature in the same passage shown in Ex. 3–20 is the use of pitch classes 6 (F#) and 10 (Bb). There is a seven-note group in the middle of m. 14. That pitch group works as a transitional bridge from the chordal presentation of a aggregate to the horizontal presentation. The first five pitches are grace notes, but Yun assigns actual note values to differentiate the last two pitch classes, 6 (F#) and 10 (Bb), in the transitional passage, as marked in Ex. 3–21. These two pitch classes mark the end of the transitional passage and also are used to mark the end of each of the five aggregates, as shown in Ex. 3–21. The F# and Bb are used in the middle of the horizontal movement in aggregates 1 and 2. In aggregate 3, Bb is used as a part of a chord and F# is used as a beginning of a leaping melody line. In aggregates 4 and 5, both notes are used as part of a chord.



Example 3-21. Piano, mm. 14–17, use of pitch classes 6 and 10

So far the analysis has followed the path of *Riul* from the beginning to show the melodic continuity of the work. It is certainly possible to examine the entire piece measure by measure to find more examples of melodic continuity, but it would be too exhaustive and arduous to do, since there are so many examples. From this point, this paper will focus more on selected examples to explain different compositional characters of *Riul*.

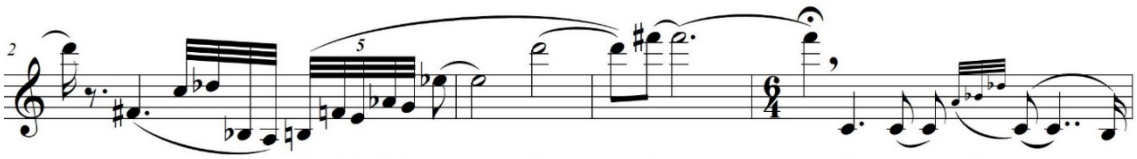
vii. Complementary play of the two lines

We have already mentioned the free dispositions of horizontal and vertical lines of the aggregates in the piano part. It is also evident that the clarinet and the piano play complementary roles, having two lines that present opposite melodic characteristics together. One has significantly less movement while another has a lot of movement. Yun explained "靜中動" (Jung Joong Dong, meaning there is movement while being quiet) as one of his compositional methods representing East Asian philosophy.[55] At times in *Riul*, the clarinet plays long notes while the

[55] Mi-kyung Lee, "윤이상의 '열린 형식'에 대하여" in *Isang Yun's Musical World*, 42.

piano has vertical chords to express the state of "靜" (Jung, quietness or stillness). At other times, both instruments play fast melodic lines to express the state of "動" (Dong, movement). These opposite states of "靜" and "動" are used together as a single intertwined musical phenomenon to reflect the meaning of "靜中動" in *Riul*.[56]

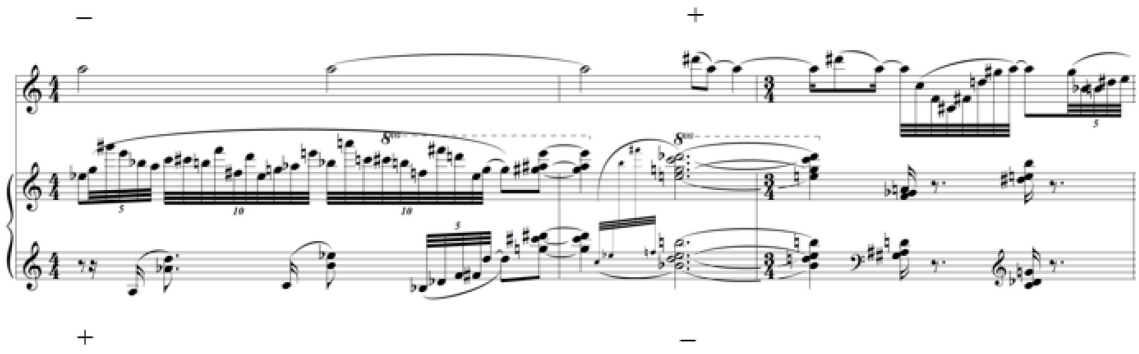
Both instruments relentlessly shift their melodic status between the opposite statuses of inactive and active movement. For example, the clarinet holds the active movement status (+) until the end of m. 2, then switches to inactive movement status (–) in mm. 3– 4, as shown in Ex. 3–22. After a fermata in m. 5, the clarinet slowly switches its melodic status back to active movement status, continued through m. 7. This kind of switching movement between active and inactive melodic statuses can be found throughout the piano part also.



Example 3-22. Clarinet, mm. 2–4

Furthermore, when one instrument represents one of the two melodic states, the other instrument almost always represents the counter state, meaning that both instrument parts are vertically entwined to show the opposite melodic conditions concurrently, as found in Ex. 3–23.

[56] For convenience of reading, melodically active passages will be indicated as "+" in the score examples, inactive passages as "–".

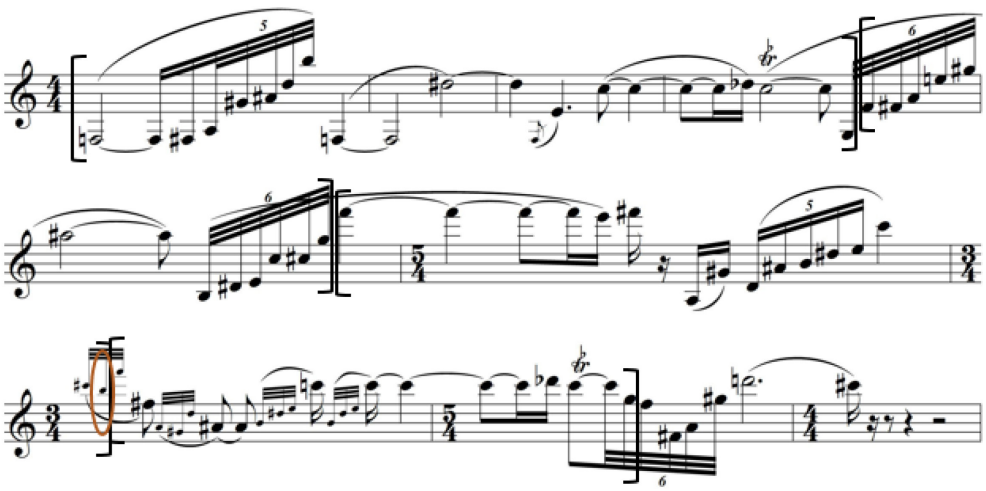


Example 3-23. Full score, mm. 8–10

viii. Repetition of pitch-class order

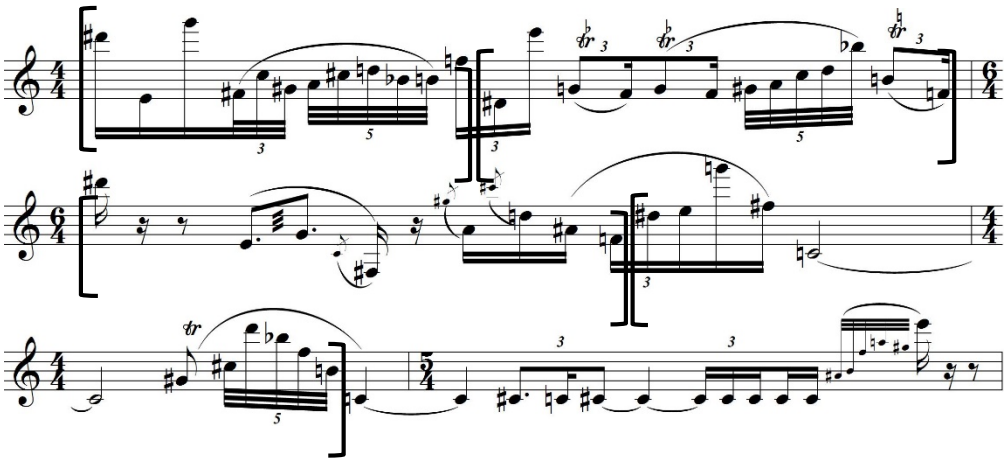
Many melodic passages in both instruments repeat the same order of the twelve pitch classes over and over while making a different melodic contour each time. Often there are small changes in the order of pitch classes when the repetition occurs, but the general order of the pitch class within each aggregate still remains similar enough to be recognizable as repetition. The two aggregates in the clarinet melody shown in Fig. 3–11 involve changes in the pitch-class order, whereas the two other examples in the piano part, the one in m. 8 shown in Ex. 3–14 and the other in mm. 14 –17 shown in Ex. 3–20, maintain the order of pitch-class throughout the repetition.

Let us look at a few more examples of repetition of the pitch-class order. The clarinet part in mm. 18–26 presents an aggregate in the order [5, 6, 9, 8, 10, 2, 11, 3, 4, 0, 1, 7] the first time and repeats it twice, as shown in Ex. 3–24. It involves small changes of pitch order within each aggregate as the repetitions occur. In one instance, G, the last pitch-class in the aggregate, is substituted by B, making an incomplete aggregate at the beginning of m. 24, as marked in Ex. 3–24.



Example 3-24. Clarinet, mm. 18–26

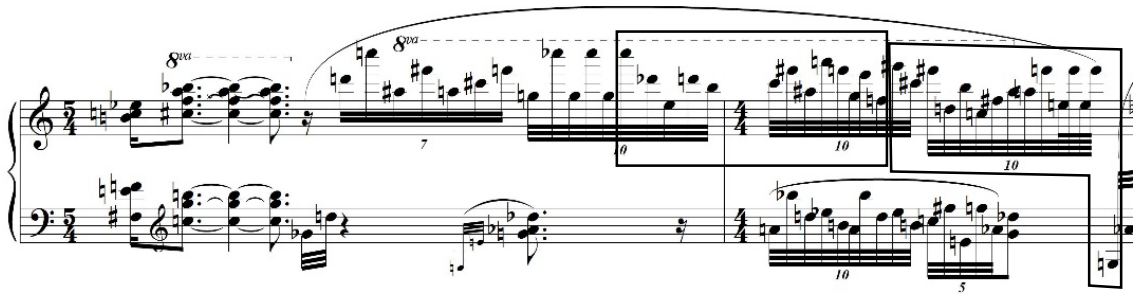
The clarinet plays an aggregate in a new order in mm. 27–30. The order of the first aggregate starting in m. 27 is [3, 4, 7, 6, 0, 8, 9, 1, 2, 10, 11, 5]. It is repeated three times, and the repetition involves small changes of pitch order as well as some pitch omission at the same time. Pitch-class 0 (C) is omitted in the first repeated set, and pitch-class 11 (B) in the second repeated set, as shown in Ex. 3–25.



Example 3-25. Clarinet, mm. 27–30

While the clarinet takes a rest between two aggregates as shown in Ex. 3–24 and 3–25, the piano has another group of repeated aggregates in mm. 25–26. The order of the first aggregates is [8, 1, 3, 2, 11, 0, 6, 10, 9, 5, 7, 4], and it is repeated twice with a slight order change

each time, as shown in Ex. 3–26. The piano passage therefore connects the two different aggregates of the clarinet shown above, and it also presents a repeated pitch-class order, as the two adjacent clarinet melodies do.



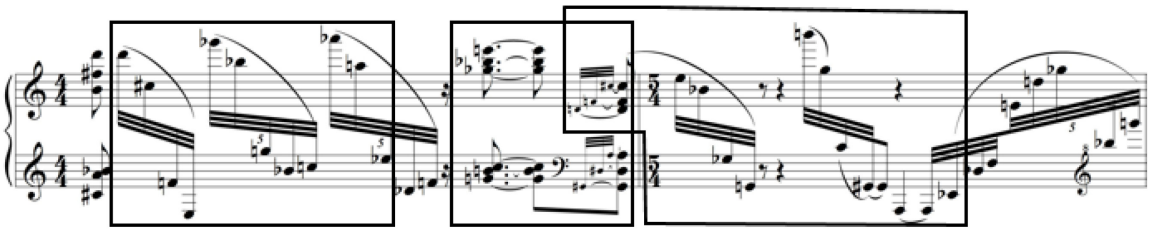
Example 3-26. Piano, mm. 25–26

It is worth mentioning that two of three passages mentioned above conclude their melodic movement in similar ways. The clarinet melody in the middle of m. 25 repeats only the first five pitches of the previous aggregate, [5, 6, 9, 8, 2], before abruptly ending with a short C#6. The piano melody at the end of m. 26 repeats [8, 1, 3, 2, 0, 6]: except for the omission of pitch class 11 (B), the first six pitches of the aggregate in the passage shown in Ex. 3–26. In both cases, the melodies end while repeating the first part of each aggregate, alluding to the beginning of a new repetition. It seems that the melodies want to continue the repetition of each aggregate, but both attempts are ended in the middle of the melodic run. It therefore reveals one of Yun's compositional philosophies at a local level: that is there no clear ending or beginning in his music. He said that his musical output was the result of capturing a moment of the musical flow that is always flowing in the universe.[57] In *Riul*, the beginning of the piece could be understood as a

[57] Yun and Sparrer, "Über meine Musik: Philosophie," in *나의 길, 나의 이상, 나의 음악: 윤이상의 음악미학과 절학*, trans. Chung Gyochul and Yang Injung (Seoul: Hice, 1994), 26.

middle, or an end, of some musical flow, and the end of the piece also can be regarded as a beginning of musical movement.[58]

While the clarinet is finishing its pitch-class repetition in m. 29, the piano introduces an aggregate in a new order, [2, 1, 5, 4, 6, 10, 7, 11, 0, 8, 9, 3], as shown in Ex. 3–27. Let us follow the repetitions of this aggregate. First, the aggregate is played as successive thirty-second notes and quintuplets (group 1). Note that Yun did not forget to put a tail of the two pitch classes 1 and 5 after the aggregate to obscure the melodic boundary of ending and beginning. After the successive thirty-second-note groups, the aggregate is divided into four vertical chords in the second half of m. 29 (group 2). The placement of the trichord, [2, 5, 1], which creates the first three pitches in the aggregate, at the later part of the four-trichord disposition allows to maintain the overall pitch order of the next aggregate (group 3). Group 3 has a melodic tail at the end that is the first seven pitches of the aggregate this time.

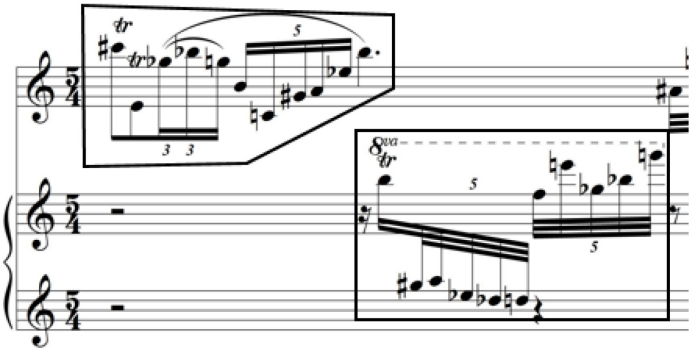


Example 3-27. Piano, mm. 29–30

In m. 31, the clarinet and piano exchange a series of aggregates. At the beginning of the measure, the clarinet plays an aggregate in the order [1, 2, 4, 5, 6, 10, 7, 11, 0, 8, 9, 3], which is similar to the pitch order that has been established by the piano in m. 29. The piano answers another aggregate in the order [11, 0, 8, 9, 3, 1, 2, 5, 4, 6, 10, 7] on the second beat of m. 31. As shown in Ex. 3–28 when an aggregate is repeated between the two instruments, the last five

[58] An example of this concept is mentioned in the Compositional Analysis section (subsection ii, Standard twelve-tone practices of *Riul*, part b, "Hexachordal combinatoriality and continuity").

pitches in the clarinet part are presented as the first five pitches in the piano part.[59] This change destabilizes the established pitch order and finally ends the repetition of the pitch-class order started in m. 29.



Example 3-28. Score, m. 31

Let us look a couple of more examples of rotation. The piano presents the first melodic aggregate in the P_6 form in m. 3. The next complete twelve-tone series of the piano, in melodic shape appears in m. 8. The pitch-class order of the aggregate is [7, 8, 4, 10, 9, 0, 1, 11, 5, 6, 2, 3], which does not belong to any standard forms of series. However, if we divide P_8 into two pitch groups, five and seven pitches from the beginning, the same interval successions of two pitch groups can be found in reverse order in m. 8. In other words, P_6 moves to P_{11} by T_5 in m. 8, but the order of pitch group is rotated, as shown in Fig. 3–12.

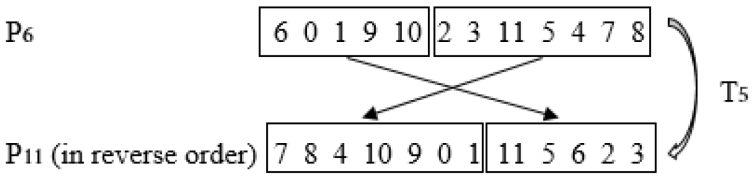


Figure 3-12. Example of rotation (1)

[59] This is called "rotation" of a twelve-tone row. Rotation is not one of the standard serial operations devised by Schoenberg, but it is used in the serial music of other composers, including Berg and Stravinsky. I thank Julian L. Hook for reminding me of the concept of rotation.

The piano presents R_0 in m. 12, which is the third melodic presentation of the twelve-tone series in the piano part. It changes in a similar way, as shown in Fig. 3–13, at the next melodic presentation of the aggregate in m. 14. The R_0 is divided into two six pitch groups and then reverses its order in the following series. Also, the series in m. 14 has complementary opci (ordered pitch class interval) in the same order as R_0. The result is RI_3, in reverse order of the two pitch groups, in the aggregate.

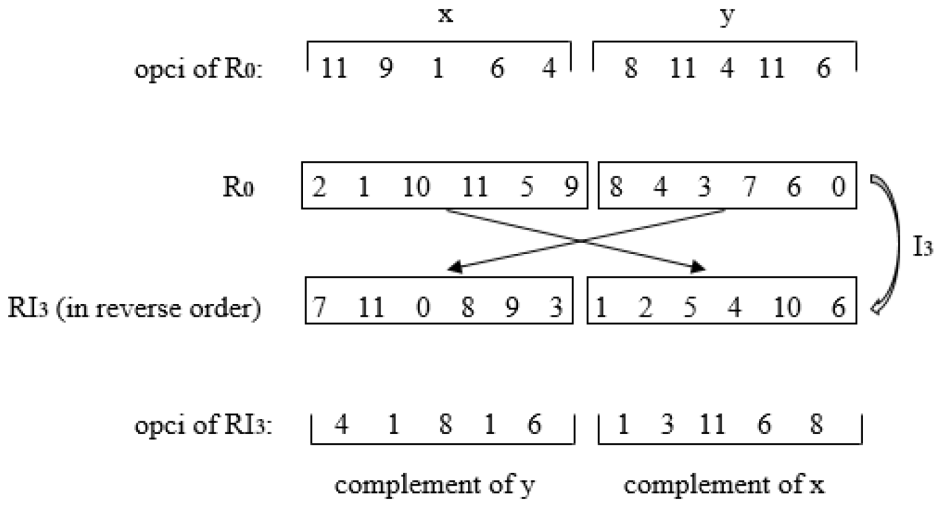
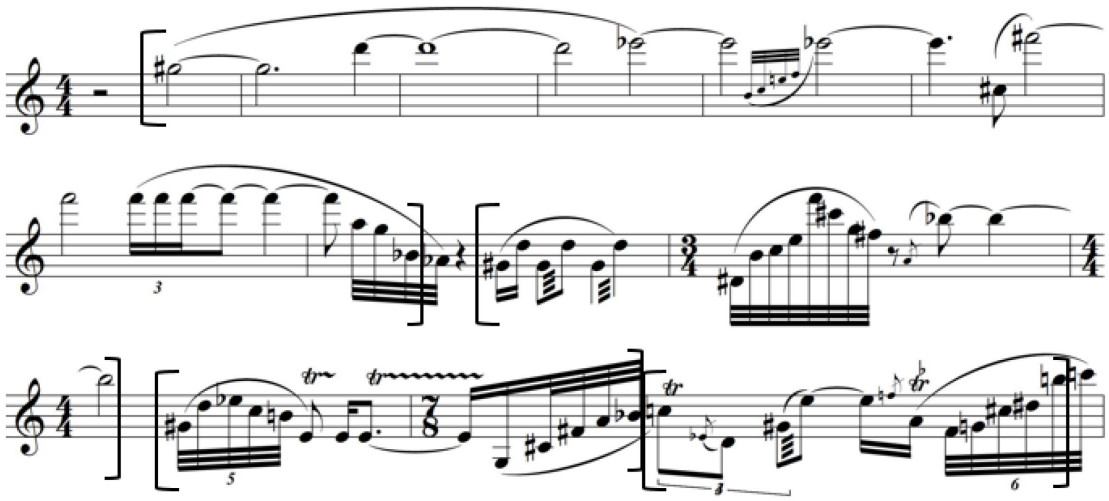


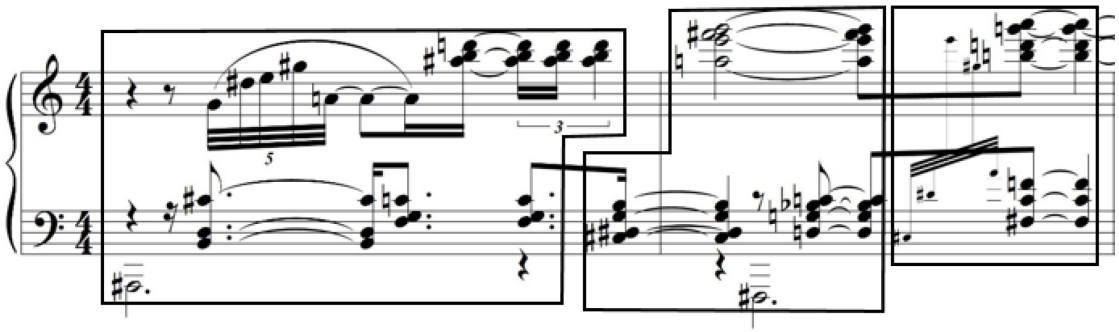
Figure 3-13. Example of rotation (2)

The clarinet part repeats the pitch order [8, 2, 3, 11, 0, 4, 5, 3, 1, 6, 9, 7, 10] twice in mm. 35–45. Each repetition of the aggregate makes a melodic contraction. The first aggregate is spread over seven measures (28 beats) to finish all twelve pitch classes, the second takes three measures (7 beats), and the third takes only two measures (3 beats) to finish each aggregate, as shown in Ex. 3–29. The clarinet melody ends with a new aggregate in the order [0, 3, 2, 8, 4, 5, 9, 10, 6, 7, 1, 11]. Note that the melody ends with 0 (C), alluding to the beginning of an aggregate like the end of other melodies mentioned before.



Example 3-29. Clarinet, mm. 35–45

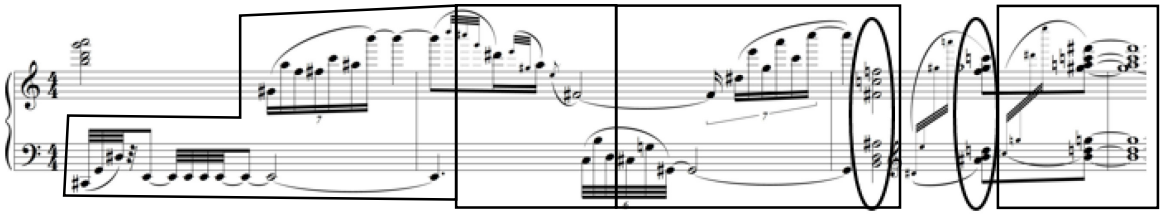
The piano in m. 35 starts an aggregate that is repeated several times until m. 40. The pitch order in the first aggregate except [1, 7, 3, 4, 8, 9] is not clear, because some pitches are stacked together as groups of trichords, as shown in Ex. 3–30. The second and third aggregates are stacked together even more, and the third aggregate omits pitch-class 10, making an incomplete aggregate.



Example 3-30. Piano, mm. 35–36

The order of pitch classes becomes clear in m. 37. The pitch order of the aggregate in the measure is [1, 7, 3, 4, 8, 9, 5, 6, 0, 10, 11, 2]. It is repeated several times, sometimes as a complete aggregate and sometimes not. Ex. 3–31 shows all the repetitions. The second aggregate

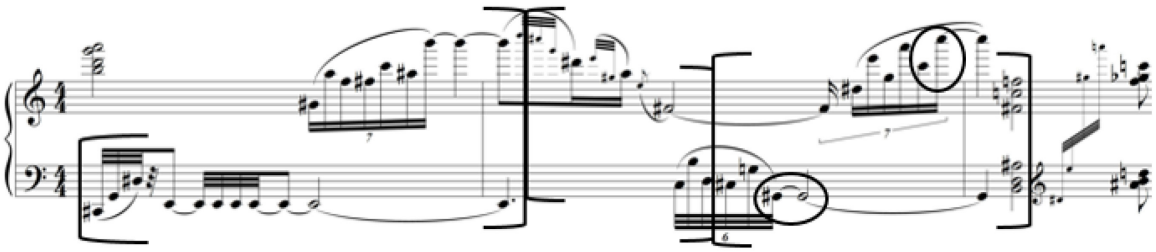
is an incomplete one, missing pitch classes 5 and 10. It uses 4 twice instead of 5, making the pitch order [1, 7, 3, 4, 8, 9, (4), 6, 0, 11, 2]. The third aggregate is a complete one. As marked in Ex. 3–31, a trichord [5, 0, 6] in the right-hand part and a trichord [10, 11, 2] in the left-hand part are both repeated in the same hand, but the actual pitches of each trichord are positioned differently when they are repeated. The fourth aggregate omits pitch-class 10.



Example 3-31. Piano, mm. 37–40

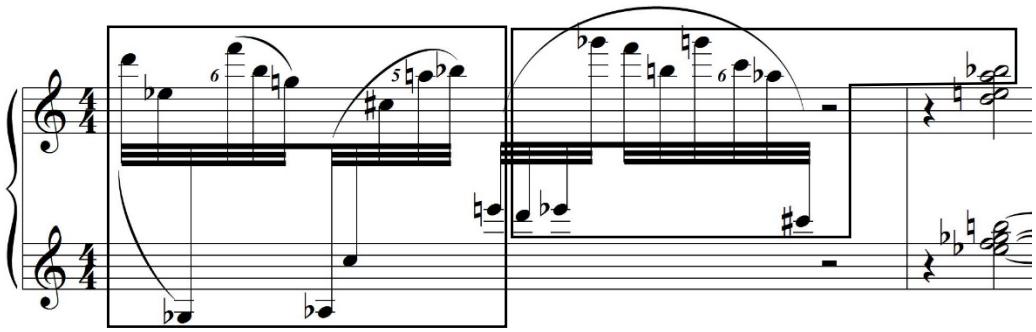
Some subtle variations and similarities between repeated aggregates can be found in mm. 37–39 of the piano. The first aggregate simply states all the twelve pitch classes in order. The first aggregate can be seen as a combination of two hexachords, [1, 7, 3, 4, 8, 9] and [5, 6, 0, 10, 11, 2]. The second aggregate omits pitch-class 10 and substitutes pitch class 4 for 5, resulting in an asymmetric combination of a hexachord [1, 7, 3, 4, 8, 9] and a pentachord [4, 6, 0, 11, 2]. The third aggregate emphasizes the relationship of chromatic dyads that makes two outgrowth branches of a chromatic dyad in the aggregate, as shown in Ex. 3–32. Pitch-class 8 is inserted after 7, making a chromatic dyad, and then a dyad of 0–1 is inserted after the two chromatic dyad sequences of 3–4 and 8–9 in the first hexachord part, making [1, 7, (8), 3, 4, 8, 9, (0, 1)]. The second hexachord of the third aggregate, on the other hand, is vertically arranged as a single chord and has the same pitch classes, [5, 6, 0, 10, 11, 2], as the second hexachord of the initial aggregate. The third aggregate therefore includes changes only in the first hexachord. The repeated part of the third aggregate emphasizes the chromatic-dyad character by starting its pitch-class order from two chromatic dyads (3–4 and 8–9) that can be found in the first hexachord of

the set. It does not make an extension of chromatic dyad 0–1 as before but goes straight to the second hexachord group, [5, 6, 0, 10, 11, 2].



Example 3-32. Piano, mm. 37–39

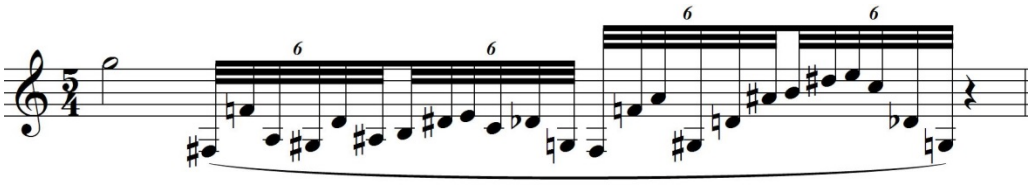
Unlike the extensive repetitions of pitch-class sets that can be found from the beginning to m. 45, only a few sporadic repetitions can be observed in the rest of the work. One example is in m. 46 of the piano. As shown in Ex. 3–33, the piano plays an aggregate in the order [2, 3, 6, 5, 11, 7, 8, 0, 1, 9, 10, 4] and repeats it in almost the same order. The last two pitch classes in the repeated set are used as a chord member at the beginning of m. 47.



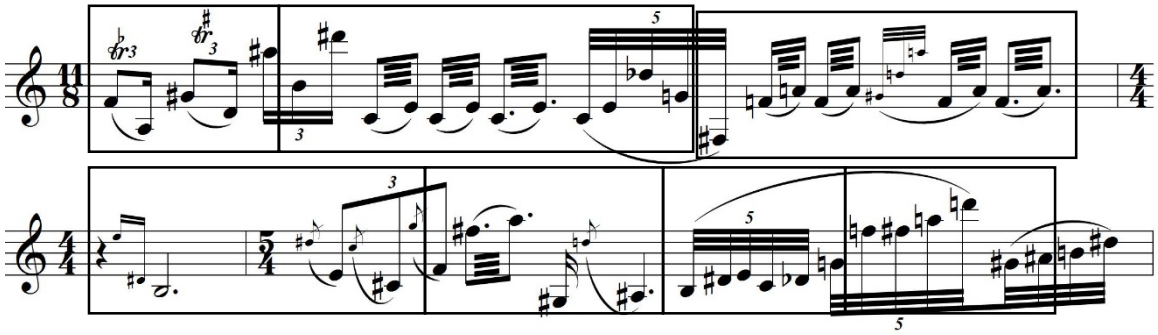
Example 3-33. Piano, mm. 46–47

Another example can be found in the clarinet part in m. 76. The clarinet plays an aggregate in the order [6, 5, 9, 8, 2, 10, 11, 3, 4, 0, 1, 7], immediately repeated in a different melodic contour, as shown in Ex. 3–34. The pitch order changes a little bit as it is repeated

several times in mm. 77–79. However, all changes of pitch order happen within the boundaries of two hexachords, [6, 5, 9, 8, 2, 10] and [11, 3, 4, 0, 1, 7] as shown in Ex. 3–35. Both piano and clarinet parts indicate to play A5 in the third hexachord which is incomplete because of missing pitch-class 10. If A#5 were used instead of A5 in the passage, it would have been made a complete hexachord group like all other hexachord groups in the passage. It is not certain the omission of pitch-class 10 in the third hexachord was intentional or a mistake of the composer. It looks logical to play A#5 instead of A5 because 1) it is a structurally satisfying choice to make a continuous stream of hexachords and 2) it does not add any difficulty to play the passage.



Example 3-34. Clarinet, mm. 76



Example 3-35. Clarinet, mm. 77–79

ix. Fluctuation of identity

It is already discussed that Yun frequently applied changes of pitch order in rows. In some cases his loose serial procedure can be understood as two different types of permutations: 1) an incomplete or modified aggregate becomes a row or 2) a row becomes an incomplete or

modified aggregate. These two phenomenon can also be understood as Yun's musical interpretation of Yin–Yang which is a continuous interplay of two opposite entities.

Let us look at the clarinet part in mm. 18–25. The clarinet introduces an incomplete aggregate [5, 6, 9, 8, 10, 0, 11, 3, 4, 1, 7] in a sparse way in mm. 18–21. Then the clarinet plays a complete aggregate [5, 6, 9, 2, 8, 10, 11, 3, 4, 0, 1, 7] in a wrong order at the end of m. 21. The next aggregate in m. 23, [5, (4), 6, 9, 8, 2, 10, 11, 3, 4, 0, 1, (11)], includes a chromatic detour of 5–4 before proceeding to the next pitch-class, 6, and an omission of pitch-class 7 at the end, making another incomplete aggregate. At m. 24, the clarinet plays [5, 6, 9, 8, 2, 10, 11, 3, 4, 0, 1, 7], which is the RI_7 form. Therefore, the series of three aggregates in the clarinet part in mm. 18–25 can be understood as three unsuccessful attempts to become the RI_7 form, as shown in Fig. 3–14.

Measures 18–21	5	6	9	8	2	0	11	3	4	0	1	7	(incomplete RI_7)
Measures 21–22	5	6	9	2	8	10	11	3	4	0	1	7	(wrong order)
Measures 22–24	5	6	9	8	2	10	11	3	4	0	1	11	(incomplete RI_7)
Measures 24–25	5	6	9	8	2	10	11	3	4	0	1	7	complete RI_7

Figure 3-14. Three disordered aggregates become RI7 form

The piano plays I_4 in m. 54, immediately changed to a twelve-tone aggregate that is similar to P_{11}. The only difference between the aggregate and P_{11} is the pitch order of 10 and 4 as shown in Fig. 3–15. The following aggregate changes its contents one step further. It has only eight notes of P_{10}, missing four pitch classes which are in parenthesis in Fig. 3–16.

Pitch-class order of P_{11}	11	5	6	2	3	7	8	4	10	9	0	1
Pitch-class order of modified P_{11}	11	5	6	2	3	7	8	10	4	9	0	1

Figure 3-15. Similarity between P11 and the aggregation used in mm. 54–55

I_4	4 10 9 1 0 8 7 11 5 6 3 2	m. 54
P_{11} (modified)	11 5 6 2 3 7 8 10 4 9 0 1	mm. 54–55
P_{10} (incomplete)	10 4 5 1 2 6 7 3 (9 8 11 0)	mm. 55–56

Figure 3-16. Gradual destabilization of I4

3. Performance issues

Riul was premiered on 28 July 1968, by Heinz Deinzer, a well-known German clarinetist. In Pamela Weston's book, *Clarinet Virtuosi of Today*, it is mentioned that Deinzer gave world premieres of two contemporary pieces: *Domaines* (clarinet solo version) by Boulez and *Riul* by Yun. Deinzer states that he had only three weeks to prepare the premiere of *Riul*.[60] When Deinzer premiered *Domaines*, he only had three days to prepare the performance, but he did not mention any difficulty in the work. In contrast, he remembered *Riul* as a "very hard" work. It is therefore possible to understand from his statement that *Riul* is a challenging work requiring a long time to prepare, even for an accomplished clarinetist who specialized in interpreting contemporary music. It must have been a memorable for him, because he clearly recalled the time frame he had to prepare the work—a short time in the context. Compared with the premiere of the Concertino by Carl Maria von Weber three days after its completion by the legendary clarinetist Heinrich Bärmann in 1811, or the premiere of the clarinet solo version of *Domaines*, it is evident that *Riul* requires considerable time and effort to be performed.

While practicing *Riul*, it might be inevitable to have questions such as "Where does this music go?," "Does it mean anything?," or "Is it worth my time to learn these tricky passages?" Obviously, musicians need a different type of approach when learning this kind of post-tonal

[60] Weston, *Clarinet Virtuosi of Today*, 86.

music. A well-known oboist, Heinz Holliger, mentioned how he approached Yun's music during an interview with Walter-Wolfgang Sparrer:

> I do not listen to a diminished triad when A, F#, and C sound together in Yun's music, but I listen to A as a live sound and two shaktis which are mirroring the A minor third above and below. Thus, I do not care whether those pitches are resolved later to G and [B] or not. I just realize them as sound.[61]

As discussed in the analysis section, post-tonal music has totally different languages than traditional tonal music. It will only frustrate musicians if they try to understand post-tonal music with standards and expectations cultivated from learning the traditional tonal literature. Therefore, it is the musicians' responsibility to understand the difference in the musical languages and adjust their perception of the music they are tackling.

Among the formidable issues that prevent the work being performed more often, the most challenging for a clarinetist to play *Riul* is the lack of rests. It takes about 13 minutes to play the whole piece, which is not long by conventional standards. However, the clarinet part has only five measures of rest in the continuous one-movement work. Moreover, every page of the clarinet part is filled with frequent uses of the altissimo register and technically demanding passages to create the constant melodic flow that Yun wanted in *Riul*. In theory, Yun wrote a great work, but from a practical standpoint, his compositional ideas made the work physically demanding.

Another practical issue is that many passages in the score have a great many notes in a short time frame. Many of Yun's works have extreme passages that seem almost unplayable in tempo. The flutist Roswitha Stäge wrote:

> If you take the given tempo seriously, there are many almost unplayable passages: [you] see many notes within a short time—often ten, twelve, or more at a stroke, which is extreme and often at the limit of a performer.… Of course, the question arises, which I have asked him, whether the individual notes are more important or the whole contour. He answered: "The contour is always important to me. I want my music to have the right

---

[61] Eun-Mi Hong, "윤이상, 또 하나의 르네상스" in *Isang Yun's Musical World*, 93 (my translation).

> gesture." There is a risk that one can lose sight of the entire gesture as a perfectionist interpreter in the legitimate attempt to play all the notes.[62]

It is clear Yun thought that the gesture is more important in his music than playing all the notes in tempo. A musical contour, or gesture, can be made by combining a myriad elements such as pitch, tempo, dynamic, and timbre. However, two basic elements are the most crucial to forming a musical contour: pitch and tempo. From Yun's answer, it can be inferred that: 1) certain notes in his music have more importance than other notes to express the musical gesture he wanted to make; 2) if it is necessary to play many notes to make the right musical gesture, the tempo can be adjusted as long as it the musical contour is retained.

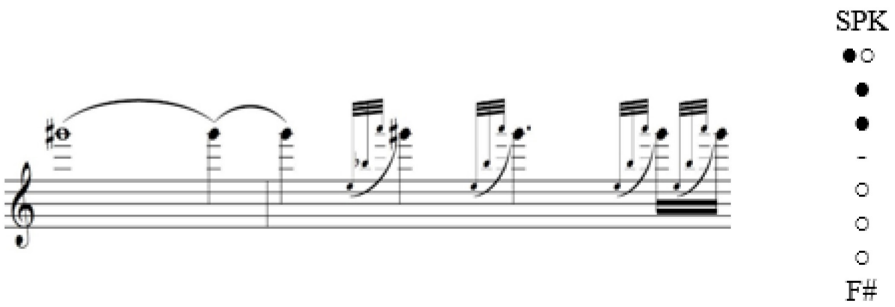
As mentioned above in the analysis section, the compositional language of *Riul* is based on twelve-tone technique, and Yun added his own compositional disciplines on top of it. Someone might ask, "Is it, then, necessary to play all notes as equally important?" Not necessarily. As discussed in detail in the analysis section, some clarinet passages are structurally more important than others, such as mm. 1–4, 6, 27, 35–44, 75–79, and 138–42, where each section represents a specific twelve-tone series. Also, when a pitch-class set is repeatedly presented in the above sections, the musical contour keeps changing with each repetition. Therefore, observing the changes of musical gesture at the local level and also at higher structural levels creates many interesting questions for the clarinetist.

Compared with other contemporary clarinet works written at a similar time, such as *Domaines* (1968) and Luciano Berio's *Sequenza IX* (1982)*, Riul* does not require many extended playing techniques, except for flutter tonguing and glissandi that only go up or down a half tone. However, the extreme density of notes, fast acrobatic passages, and frequent use of the altissimo register of the instrument make the work challenging.

---

[62] Roswitha Stäge, "Akzent bedeutet einen Anfang mit Impuls und blitzartigem Zurückgehem," quoted in Shin-Hyang Yun, "윤이상의 음향 제스쳐 진단," in *Isang Yun's Musical World*, 11 (my translation).

There are particularly tricky passages in the clarinet part, for which it is certainly helpful to have some technical remedies.[63] The first example is in m. 17. The passage has a local principal note of G#6, decorated with three grace notes of E5, Bb5, and A6 several times, as shown in Ex. 3-36.[64] The Bb–A–G# sequence emphasizes T11 in pitch-class space, but the actual interval of Bb–A is a major 7th. This interval is problematic, because A6 does not speak well with the traditional fingering in this passage. It can be easily fixed by using the right-hand little finger to put down the F# key for A6. The F# key can remain down for the following G#6 also. Be aware that adding the F# key raises both pitches of A6 and G#6. However, it makes a much desirable outcome for making the large leaps secure.



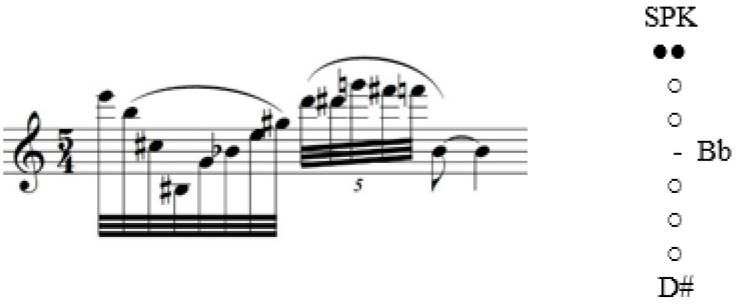
Example 3-36. Fingering option for A6 in mm.17–18

The next example is in m. 32. The second beat of the measure has a thirty-second-note quintuplet, as shown in Ex. 3–37. It is possible to play this passage with commonly used fingerings, but there are alternative fingerings that might work better for some players. The point is to use a traditional Bb5 fingering to make F#6. That traditional (left-hand 1, 2, and right-hand Bb side key) is already widely used to make an excellent overtone F#6. To make G6, simply lift the left-hand middle finger from the Bb5 (left-hand 1 and right-hand Bb side key). Adding the left

[63] In the notation of all alternative fingering options, if there is no indication of the octave key and the thumb hole, both of them should be applied to each fingering to produce the indicated notes.

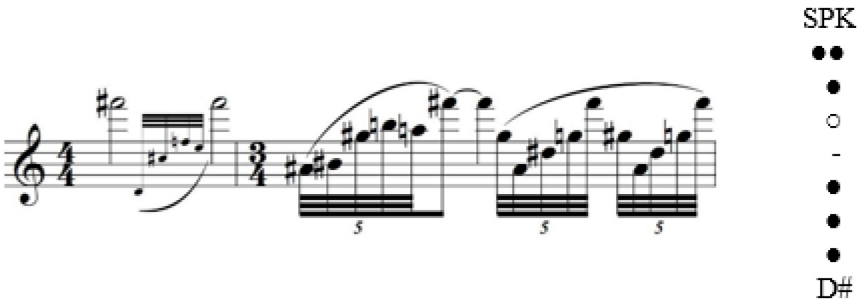
[64] All pitches discussed in this chapter are notated in Bb. For example, the actual sound of G#6 in this passage is F#6.

middle finger back makes F#6, then lifting the right-hand Bb side key from it (left-hand 1 and 2) makes F6.



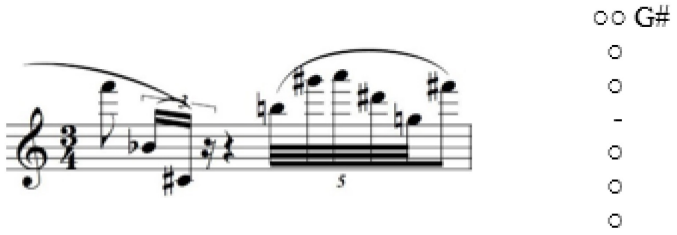
Example 3-37. Fingering option for G6 in m. 32

The long F#6 fingering (left-hand 1, 2, right-hand 1, 2, 3, and pinky Eb) is useful to play mm. 47–48 (Ex. 3–38).



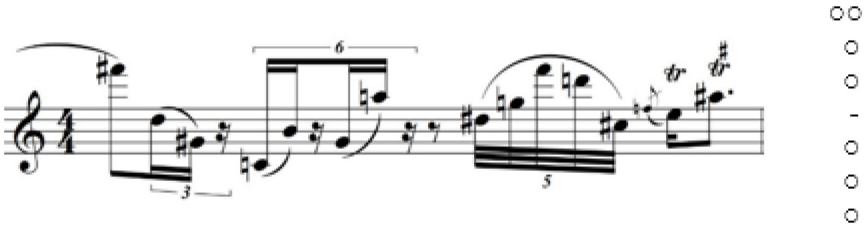
Example 3-38. Fingering option for F#6 in mm. 47–48

There is another tricky passage on the last beat of m. 54, as shown in Ex. 3–39. It is particularly hard for the clarinet to play a slurred downward leap A6–D#6 in the passage. On top of that, it makes the passage even harder to play that the thirty-second-note quintuplet is supposed to be played very quickly. My suggestion is to use the fingerings in Ex. 3–36 to play G#6 and A6. Then take an open fingering by using the right-hand G# side key only, with no other keys or holes to play D#6. The long F# fingering (see Ex. 3–38) is good for playing the last note, F#6, in the passage.



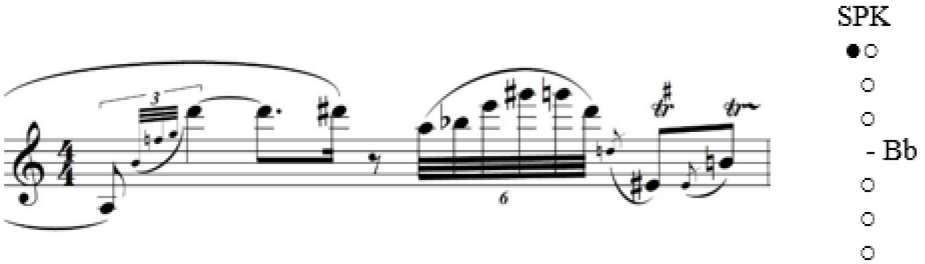
Example 3-39. Fingering option for D#6 in m. 54

Another open fingering is useful for playing D6 in the thirty-second quintuplet passage in m. 54 (see Ex. 3–40). The long F#6 fingering is probably the best choice to play a major 7th interval between G5 and F#6. Then an open fingering of D6 (literally open all holes and keys including the register key) could be useful for a quick D6-C#5 progression.



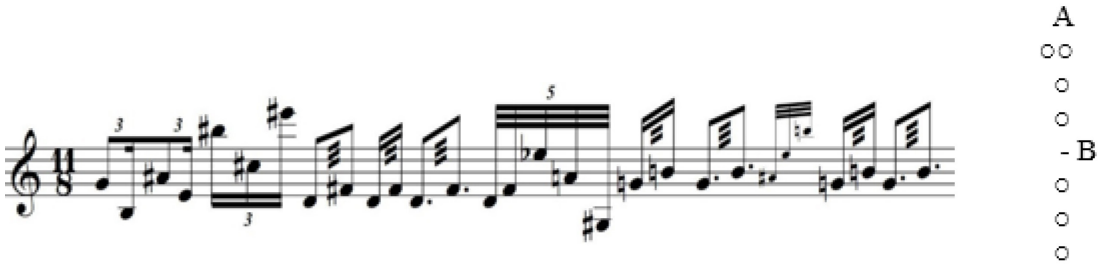
Example 3-40. Fingering option for D6 in m. 56

Auxiliary fingerings are also recommended for G#6 and G6 in the thirty-second-note sextuplets in m. 59. The fingering for G#6 (right-hand Bb side key) and G6 (left-hand 1 and right-hand Bb side key) are recommended. These two fingerings allow the fast and smooth transition required in the passage shown in Ex. 3–41.

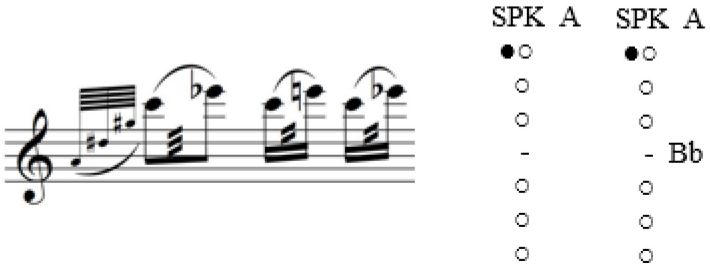


Example 3-41. Fingering option for G#6 in m. 59

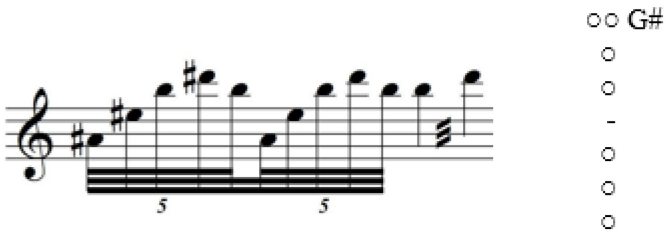
The clarinet part of *Riul* includes numerous tricky tremolos that are awkward to play with traditional fingerings. The tremolo between G4 – B4 in m. 77 (see Ex. 3–42) can be played easily by using a trill fingering of B4 (adding a right-hand top side key with the A4 fingering). Tremolos between C6 – Eb6 and C6 – E6 in m. 124 (see Ex. 3-43) can be played well with open fingerings (adding a A4 key with C6 fingering for Eb6 and adding a A4 key, a right-hand Bb4 trill key with C6 fingering for E6). Overblowing of G#4 fingering to make D#6 is also effective to play B5 – D6 quintuplets and a tremolo in m. 185 (see Ex. 3-44).



Example 3-42. Fingering option for B4 in m. 77



Example 3-43. Fingering options for Eb6 (left) and E6 (right) in m. 124



Example 3-44. Fingering option for D#6 in m. 185

Chapter 4: CONCLUSIONS

The two works, *Domaines* by Boulez and *Riul* by Yun, illustrate two distinctive serial compositional trends that were developed from the Schoenbergian twelve-tone technique. In *Domaines*, Boulez experimented with serialization of different musical parameters featuring the possibility of six different options that probably came from the title of Stéphane Mallarmé's poem. He systematically applied different musical parameters such as pitch, rhythm, dynamics, attacks, and retrograde types from precomposed materials while liberating the pitch from the row by applying a pitch multiplication method that he first used in *Le Marteau* and had continued to use ever since. *Domaines*, therefore, represents the fusion of Integral Serialism with Boulez's own Aleatoric idea.

In contrast, Yun's *Riul* is based on more traditional twelve-tone technique combined with Yun's East Asian philosophy. *Riul* demonstrates the composer's deep understanding of twelve-tone technique. His use of different types of row forms and the hexachord subsets that penetrate from the foreground level to the higher structural levels of the score is eloquent and impressive. The most impressive aspect of Yun's composition, however, is that he did not just use the compositional technique he had learned in his music, but successfully infused East Asian philosophy to create his own works. Yun freely reordered pitches within the boundary of strict structural disciplines to express his own identity as an Asian composer. The use of twelve-tone technique is evident in the score, yet he expressed far more than just technique in *Riul*. The endless flow of the melody and the structural law in *Riul* express not only the fusion of the melodic character of Korean instrumental music into Western instruments but also the fusion of East Asian philosophy into European music languages.

Bibliography

Auner, Joseph. *Music in the Twentieth and Twenty-First Centuries*. New York: W. W. Norton, 2013.

Bartolozzi, Bruno. *New Sounds for Woodwind*. Translated and edited by Reginald Smith Brindle. London: Oxford University Press, 1967.

Boulez, Pierre. "Aléa." *La Nouvelle revue française* 59 (November 1957): 839–57.

———. "Éventuellement." *Revue musicale*, no. 212 (1952): 111–40.

———. "Recherches maintenant." *La Nouvelle revue française* 23 (November 1954): 898–903.

Bradshaw, Susan. "The Instrumental and Vocal Music." In *Pierre Boulez: a Symposium*. Edited by William Glock, 127–230. London: Eulenburg Books, 1986.

Breatnach, Mary. *Boulez and Mallarmé: a Study in Poetic Influence*. Aldershot: Ashgate, 1996.

DeLone, Richard, Vernon Kliewer, Horace Reisberg, Mary Wennerstrom, Allen Winold, and Gary E. Wittlich. *Aspects of Twentieth-Century Music*. Edited by Wittlich. Englewood Cliffs, NJ: Prentice-Hall, 1975.

Harbinson, William G. "Performer Indeterminacy and Boulez's Third Sonata." *Tempo*, no. 169 (June 1989): 16–20.

Heaton, Roger. "The Contemporary Clarinet." In *The Cambridge Companion to the Clarinet*. Edited by Colin Lawson, 163–83. Cambridge: Cambridge University Press, 1995.

Heyworth, Peter. "The First Fifty Years." In *Pierre Boulez: a Symposium*. Edited by William Glock, 3–40. London: Eulenburg Books, 1986.

Hong, Eun-Mi. "윤이상, 또 하나의 르네상스" In *Isang Yun's Musical World and the East-Asian Culture*. Edited by the Musicological Society of Korea and the Isang Yun Peace Foundation, 87–100. Seoul: Yesol, 2006.

Jameux, Dominique. *Pierre Boulez*. Paris: Fayard, 1984.

Koch, Gerhard R. "Das Nahe im Fernen. Isang Yun und der Western." In *Isang Yun's Musical World and the East-Asian Culture*. Edited by The Musicological Society of Korea and the Isang Yun Peace Foundation, 281–94. Seoul: Yesol, 2006.

Lee, Mi-kyung, "윤이상의 '열린 형식'에 대하여" In *Isang Yun's Musical World and the East-Asian Culture*. Edited by The Musicological Society of Korea and the Isang Yun Peace Foundation, 37–54. Seoul: Yesol, 2006.

Lee, Sooja. *내 남편 윤이상*, 2 vols. Seoul: Changbi, 1998.

Losada, C. Catherine. "Between Freedom and Control." *Journal of Music Theory* volume 61, no. 2 (October 2017): 201-242.

Mallarmé, Stéphane. *Collected Poems*. Translated by Henry Weinfield. Berkeley: University of California Press, 1994.

Mitchell, Ian. "Toward a Beginning: Thoughts Leading to an Interpretation of *Domaines* for Solo Clarinet by Pierre Boulez." In *The Versatile Clarinet*. Edited by Roger Heaton, 109–26. New York: Routledge, 2006.

Peyser, Joan. *Boulez*. New York: Schirmer Books, 1976.

Schmidt, Dörte. "Yun und die identitätsstiftenden Möglichkeiten der Kunst in Europa," in *Isang Yun's Musical World and the East-Asian Culture*. Edited by the Musicological Society of Korea and the Isang Yun Peace Foundation, 295–316. Seoul: Yesol, 2006.

Trenkamp, Anne. "The Concept of 'Aléa' in Boulez's 'Constellation-Mirror.'" *Music & Letters* 57, no. 1 (January 1976): 1–10.

Weston, Pamela. *Clarinet Virtuosi of Today*. Baldock, Hertfordshire: Egon, 1989.

Whittall, Arnold. "*Domaines*; *Pli selon pli*, No. 2; *Improvisation I sur Mallarmé* by Pierre Boulez." *Music & Letters* 59, no. 3 (July 1978): 380–81.

Yun, Isang, and Walter-Wolfgang Sparrer. *나의 길, 나의 이상, 나의 음악: 윤이상의 음악미학과 절학*. Translated by Chung Gyochul and Yang Injung. Seoul: Hice, 1994.

Yun, Shin-Hyang. "윤이상의 음악 제스쳐 진단." In *Isang Yun's Musical World and the East-Asian Culture*. Edited by The Musicological Society of Korea and the Isang Yun Peace Foundation, 37–54. Seoul: Yesol, 2006.